

# FLIGHT

The  
AIRCRAFT  
ENGINEER  
&  
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

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## Flight

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### DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

<b>1924</b>	
Oct. ....	Schneider Cup Race, Baltimore.
„ 16 ....	Dr. A. Rohrbach (of the Rohrbach Metall-Flugzeugbau Co.) "Large All-Metal Seaplanes," before R.Ae.S.
„ 30 ....	Major J. S. Buchanan, A.F.R.Ae.S. (of the Technical Department, Air Ministry): "The R.Ae.C. Light Aeroplane Competitions," before R.Ae.S.
Nov. 13 ....	Professor L. Birstow, C.B.E., F.R.S., F.R.Ae.S. (Zaharoff Professor of Aeronautics, University of London): "Skin Friction."
„ 27 ....	Dr. G. C. Simpson, C.B.E., F.R.S. (Director, Meteorological Office): "Thunderstorms."
Dec. 4 ....	Colonel F. Searle, C.B.E., D.S.O. (Managing Director, Imperial Airways, Ltd.): "The Maintenance of Commercial Aircraft."
„ 5-21	Paris Aero Show.
„ 18 ....	Mr. A. R. Watson Watt (Superintendent, Radio Research Board Station): "Recent Studies on Radiotelegraphic Atmospherics."
<b>1925</b>	
Feb. 5 ....	Air Commodore C. R. Samson, C.M.G., D.S.O., A.F.C., A.F.R.Ae.S.: "The Operation of Flying Boats in the Mediterranean."

## EDITORIAL COMMENT.



**S**TARTED in gloom, figuratively speaking, the Air Ministry Competitions for Two-Seater Light 'Planes, may be said to have finished in sunshine. The large number of machines eliminated before the actual trials, and the relatively small progress made during the first two days rather indicated that the competition was likely to be somewhat of a failure. In fact, there were those who, by Tuesday evening, were already applying the Lympne term fiasco, or its modern slangy equivalent "wash-out," to the whole thing, and who were prepared to believe that light 'planes were of no use, and never would be of any use.

Then, slowly at first, but with increasing pace, the outlook changed. Good performances were put up, engines which had been refractory became tractable, and during Thursday, Friday and Saturday morning a feverish activity reigned which entirely dispelled the gloom of the first two days. And, finally, in the Grosvenor Cup Race, on Saturday afternoon, no less than nine machines completed the 100 miles' course at full speed, a percentage which had scarcely been expected. Altogether it can, we think, be said that the Lympne week has been a success, and that, although it may be a little difficult to realise at the moment, we have really discovered a great deal which can be made use of in the future.

Probably the aircraft industry is, generally speaking, somewhat disappointed with the Lympne week. Mainly because so many machines were denied an opportunity to show what they can really do. This was, of course, due mainly to the difficulty of the high-speed tests, which, in spite of having been reduced from two sets of six laps each to two of five laps each, were still far too severe for the majority of the engines.

It is, of course, easy to be wise after the event, but FLIGHT can at any rate claim to have pointed out before the competition the severity of the tests, and in our issue of September 25 we stated that "if there were such an institution as a society for prevention of cruelty to engines, it would undoubtedly step in and, on 'humane' grounds, prevent the

competitions from being held." It now seems clear that if competitors had been permitted to change their engines *ad lib.*, very much more information would have been gained concerning the performance of machines, although in that case the engine weaknesses would hardly have come to light with such startling persistency as they did.

A better plan would probably have been to let competitors fly the high-speed tests over the same straight-line course as that used in the low-speed tests. While furnishing considerably more reliable information relating to the actual speed, this test would not have been anything like as severe on the engine as was the 125 miles' high-speed test demanded. It would still have been possible to insist that competitors should fly for ten hours during the week, but all of this flying could then have been done at cruising speed.

As it was, one engine at least came through the gruelling tests with flying colours. The ungeared Bristol "Cherub" was fitted in the Bristol "Brownie" (where it gave practically no trouble at all), in the Cranwell biplane (in which it was kept running at practically full power for 18 hours), and in the Beardmore "Wee Bee" (where, but for a choked oil spray pipe which caused the big-end to run hot, it ran extremely well throughout until the big-end broke during the last lap of the high-speed test). It can, therefore, be said that with another year of development this engine may reasonably be expected to come very near the requirements of the two-seater light 'plane. It is true that in the competitions the engine—all the engines, in fact—required very careful nursing, but Mr. Fedden assures us that with another year of development work he can get the "Cherub" to give 40 h.p. and to be as reliable as any high-power aero engine. Into the question of future engine capacity we do not wish to enter at the moment beyond pointing out that two ways appear to be

open. One is to go on developing the 1,100 c.c. high-speed engine until reliability combined with low weight and high power is attained. Another is to go for the larger engine, say, 2,000 c.c., and to limit the piston speed. The problem is very complicated, and very good arguments can be put up for either course.

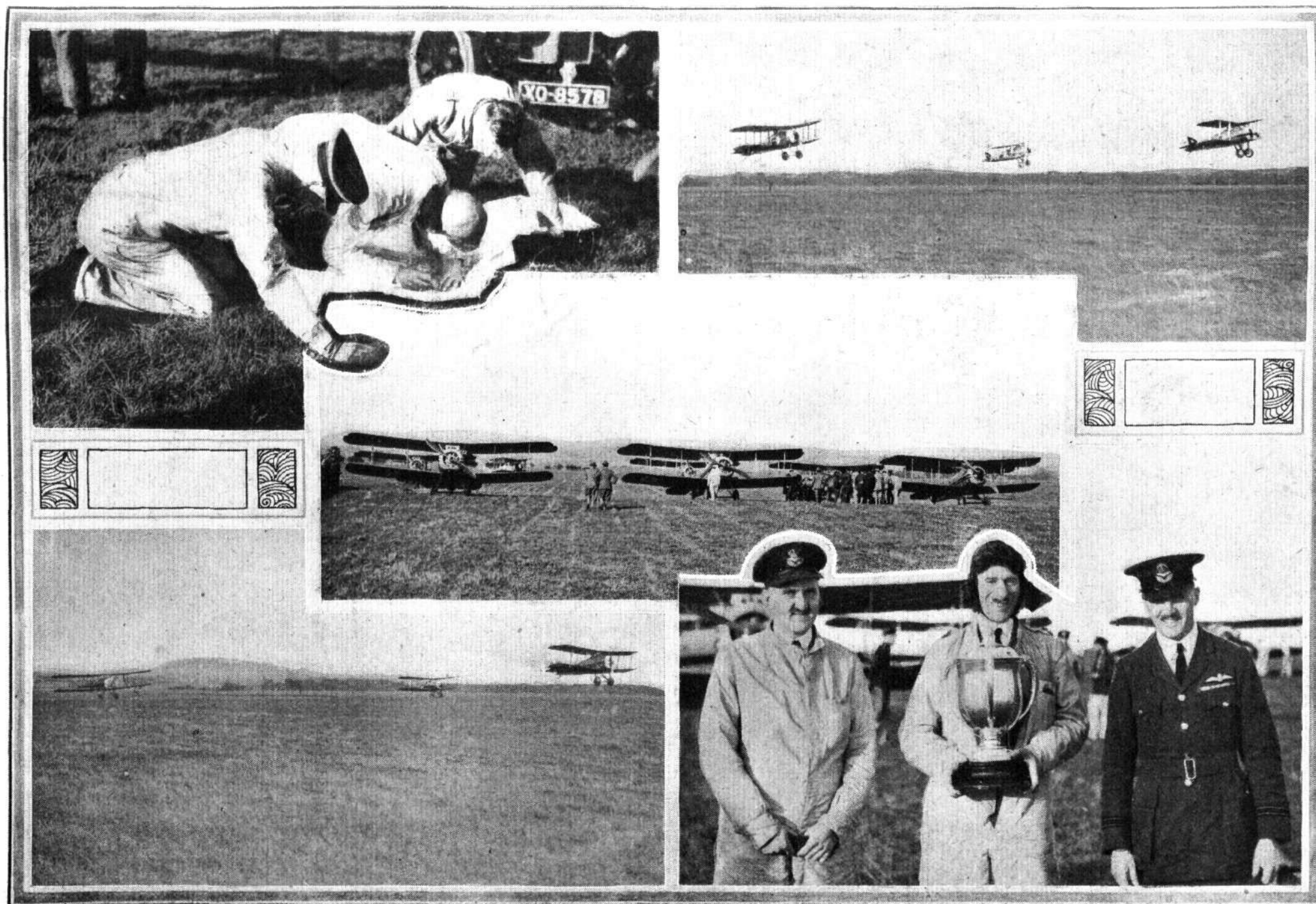
As regards the machines themselves, it can be said that they were without exception very fine examples of aircraft design and construction. Some of them are undoubtedly on the heavy side, and could have been lightened by at least 100 lbs. On the other hand, if the Air Ministry is looking for machines suitable for training purposes, it would seem that fairly substantial construction is needed if the machines are to stand up to the rough handling which they usually receive at the hands of inexperienced pilots or pupils.

It might be thought that as far as the aircraft industry is concerned, the immediate and net result of the competition is that the Air Ministry has caused the industry to spend something like £30,000 in order to win £3,000. While on the face of things this is so, and there is justification for the opinion that much of the value was lost owing to machines being prevented from really showing what they could do, we think that with a little goodwill on both sides this apparent injustice may to a very great extent be overcome to mutual satisfaction. By the arrangement which appears to be in active contemplation for the Air Ministry to try-out at Martlesham the various machines entered for the competitions, the performance tests with the special facilities and apparatus with which that station is equipped should give exact figures, and thus the Air Ministry will obtain the fullest possible information and the manufacturer whose aeroplane comes nearest fulfilling the requirements should be fairly certain of consideration in the placing of orders.



ROYAL AERO CLUB OFFICIALS AT LYMPNE: Left to right (standing): Mr. Howard T. Wright (Chief Marshal), Mr. B. Stevenson (Assistant Secretary), Maj. J. S. Buchanan, O.B.E. (Assistant Clerk of the Course), Lieut.-Col. W. A. Bristow (Controller of Records), Capt. A. R. Dresser (Aerodrome Assistant), Lieut.-Col. M. O. Darby (Clerk of the Course), Lord Edward A. Grosvenor (Judge), Mr. A. G. Reynolds (Timekeeper), Lieut.-Com. H. E. Perrin (Secretary). Left to right (seated): Air Commodore F. C. Halahan, C.M.G., D.S.O., M.V.O., C.B.E. (Judge), Brig-Gen. Sir Capel Holden, K.C.B., F.R.S. (Judge), Lieut.-Col. F. K. McClean, A.F.C. (Steward), Air Vice-Marshal Sir W. Geoffrey H. Salmond, K.C.M.G., C.B., D.S.O.





**THE RACE FOR THE AIR LEAGUE CHALLENGE CUP :** The result of this race, flown on Wednesday, October 1, was recorded in last week's issue of "Flight," No. 25 Squadron (Hawkinge) becoming holders of the Cup. Our photographs show : In the upper left-hand corner, the Hawkinge team plotting their course, announced but 15 minutes before the start. In the centre, the machines lined-up for the start. In the upper right-hand corner, No. 32 Squadron (Kenley) taking off. Below : On the left, Hawkinge (No. 25 Squadron) gets away ; right, the winning team—Flight-Lieuts. W. E. G. Mann, E. B. Mason, and C. R. Keary. After the race Flight-Lieut. Mann gave a most spectacular demonstration of stunt flying.

# TWO-SEATER LIGHT PLANE COMPETITIONS AT LYMPNE

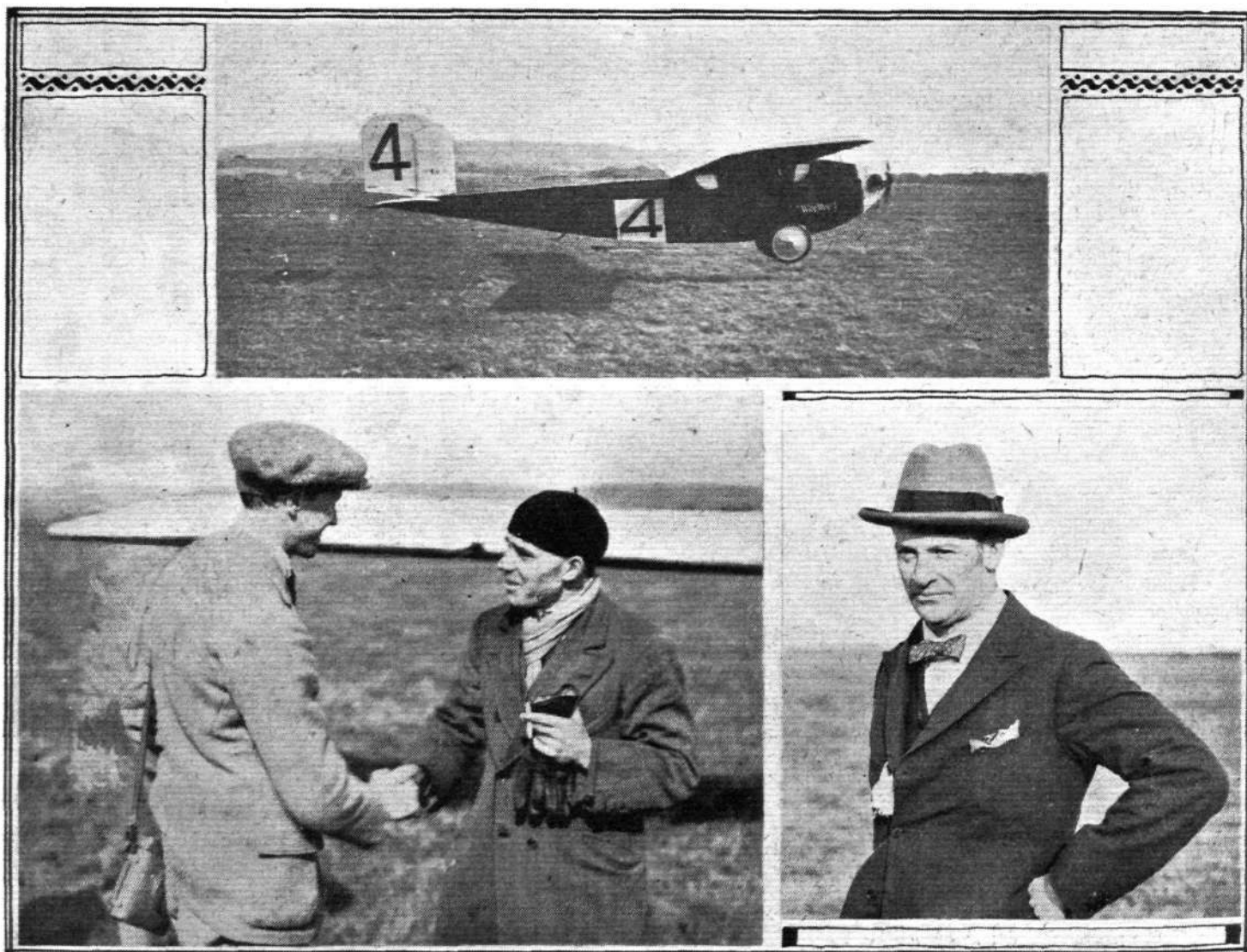


TABLE SHOWING OFFICIALLY RECOGNISED PERFORMANCES AT LYMPNE

Machine.	Engine.	Pilot.	Speed.			Get off Marks.	Pull up Marks.	Total Marks.	Reliability Miles flown.	Trials. Hours flown.		
			High. m.p.h.	Low. m.p.h.	Marks.					h.	m.	s.
Beardmore "Wee Bee" ...	"Cherub"	Piercey...	70.11	39.66	347.52	215	26.0	588.52	737½	11	54	41
Bristol "Brownie" ...	"Cherub"	Uwins ...	65.19	38.73	279.92	235	47.4	562.32	512½	10	21	25
Hawker "Cygnet II" ...	A.B.C. ...	Raynham	—	37.42	—	200	77.33	277.33	475	10	24	40
Hawker "Cygnet I" ...	Anzani ...	Longton	—	43.95	—	181	83.3	264.3	400	8	22	53
Parnell "Pixie" ...	Blackburne	Douglas	—	37.22	—	149	80.0	229.0	450	10	4	35
Cranwell "C.L.A. 2" ...	"Cherub"	Comper...	—	—	—	—	50.6	50.6	762½	17	53	18
Westland "Wood Pigeon"	"Cherub"	Gaskell...	—	—	—	—	—	—	125	2	31	37

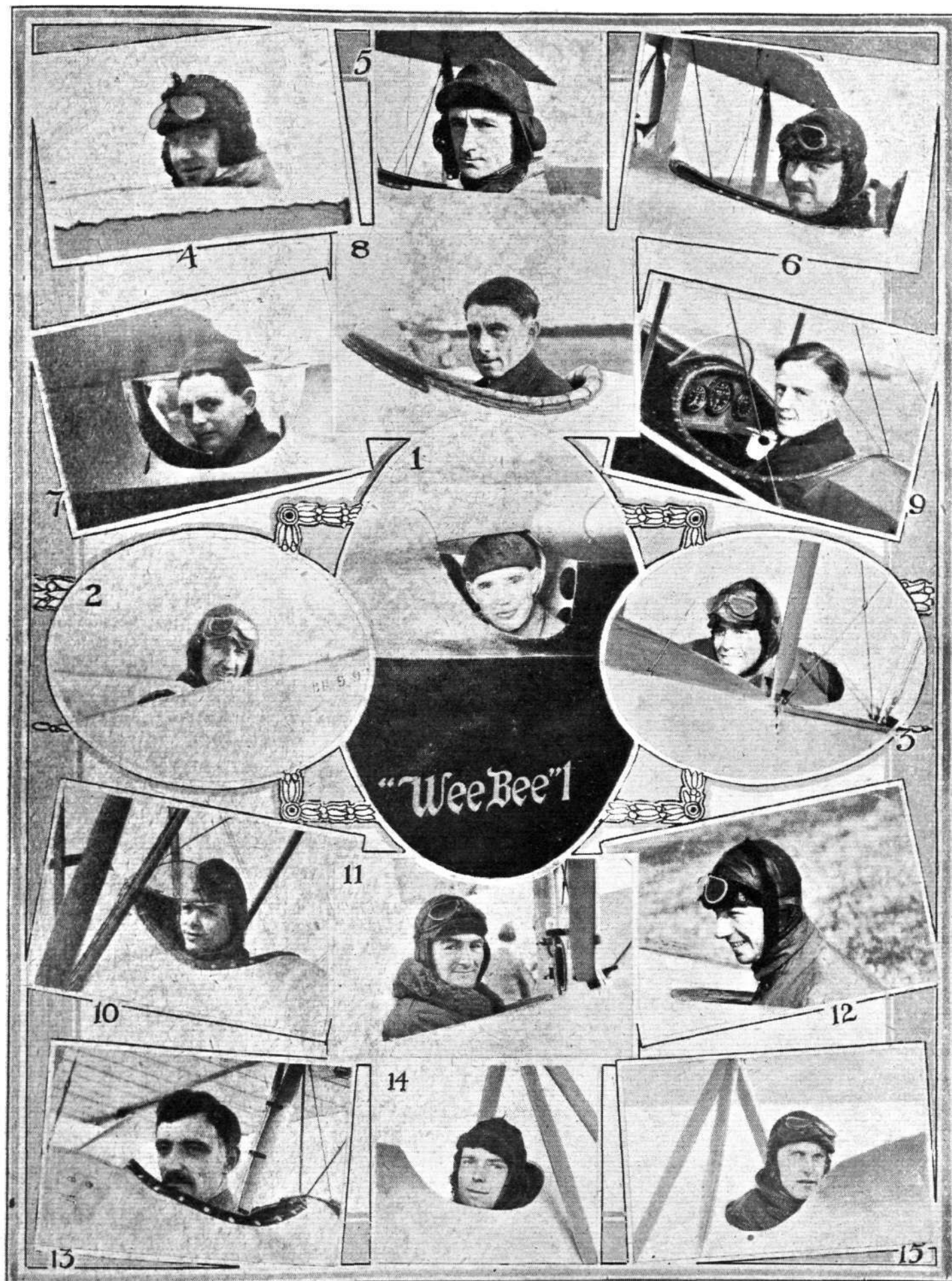
THE two-seater light 'plane trials (and they were trials) are over, and the Air Ministry's First Prize of £2,000 has been won by Maurice Piercey on No. 4, the Beardmore "Wee Bee I"

light monoplane, Bristol "Cherub" engine. Second place was secured by Uwins on No. 1, the Bristol "Brownie" monoplane, Bristol "Cherub" engine, who thus receives the



THE WINNER : Our photographs show : Above, the Beardmore "Wee Bee I," Bristol "Cherub" engine, on which Piercey won first prize in the Lympne Light 'Plane competitions. Below, left Mr. Shackleton, the designer of the "Wee Bee I," congratulating Piercey (in black cap) on his victory. On the right Mr. Alan Chorlton, of Beardmore fame.





THE PILOTS IN THE LYMPNE LIGHT 'PLANE COMPETITIONS : 1, Piercey on Beardmore "Wee Bee I," which was one and therefore won. 2, Uwins second on the Bristol "Brownie." 3, Comper, who secured the reliability prize on the Cranwell "C.L.A.2." 4, Campbell. 5, Gaskell. 6, Winstanley. 7, James. 8, Lankester Parker. 9, Biard. 10, Hinkler. 11, Longton. 12, Raynham. 13, Payn. 14, Haig. 15, Douglas.



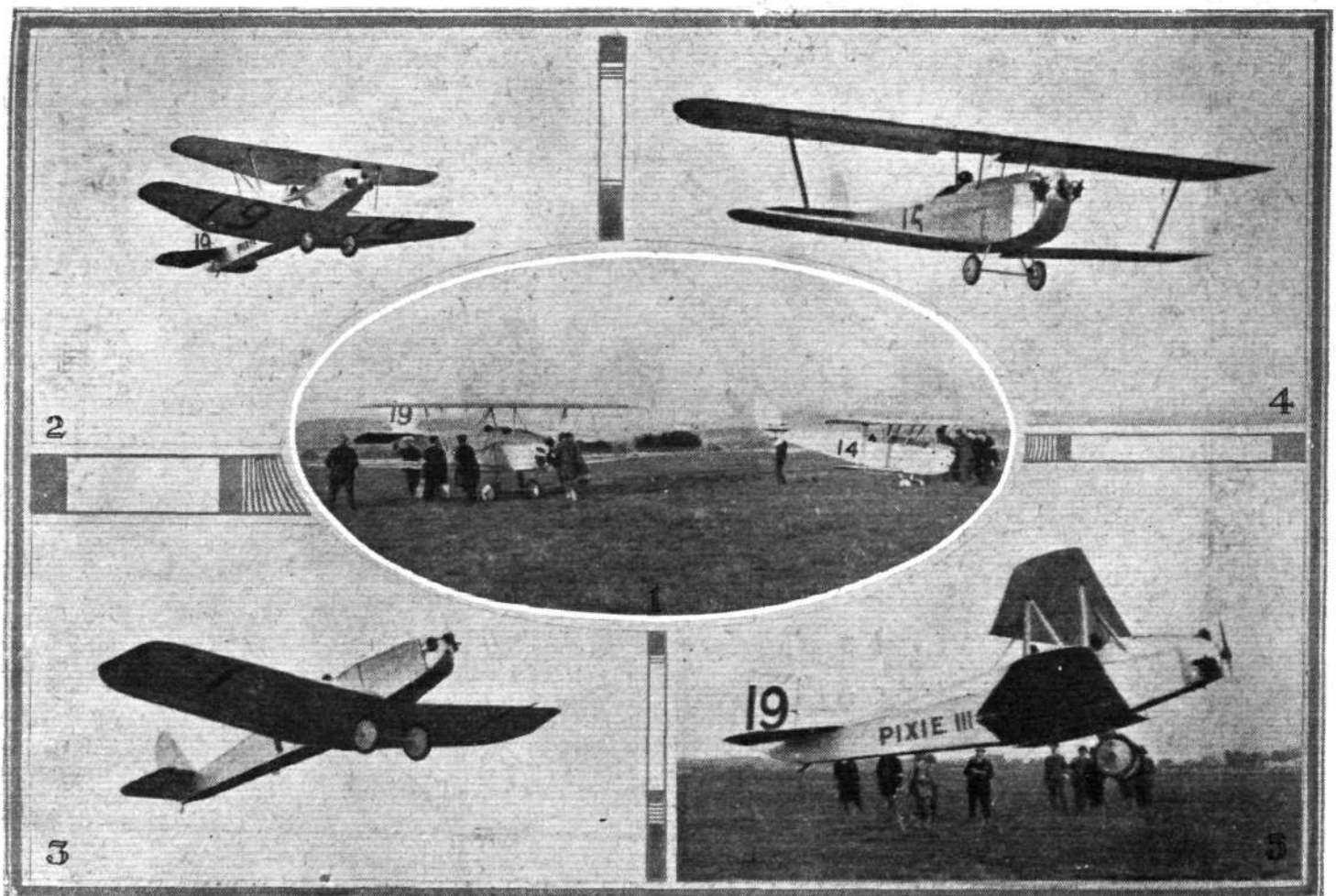
**THE CLERK OF THE COURSE :** Lieut.-Col. Darby in his Bentley.



**AT THE LYPNE LIGHT 'PLANE TRIALS :** Sir Henry White Smith, K.B.E., and (left) Air Commodore F. C. Halahan, C.M.G., D.S.O.

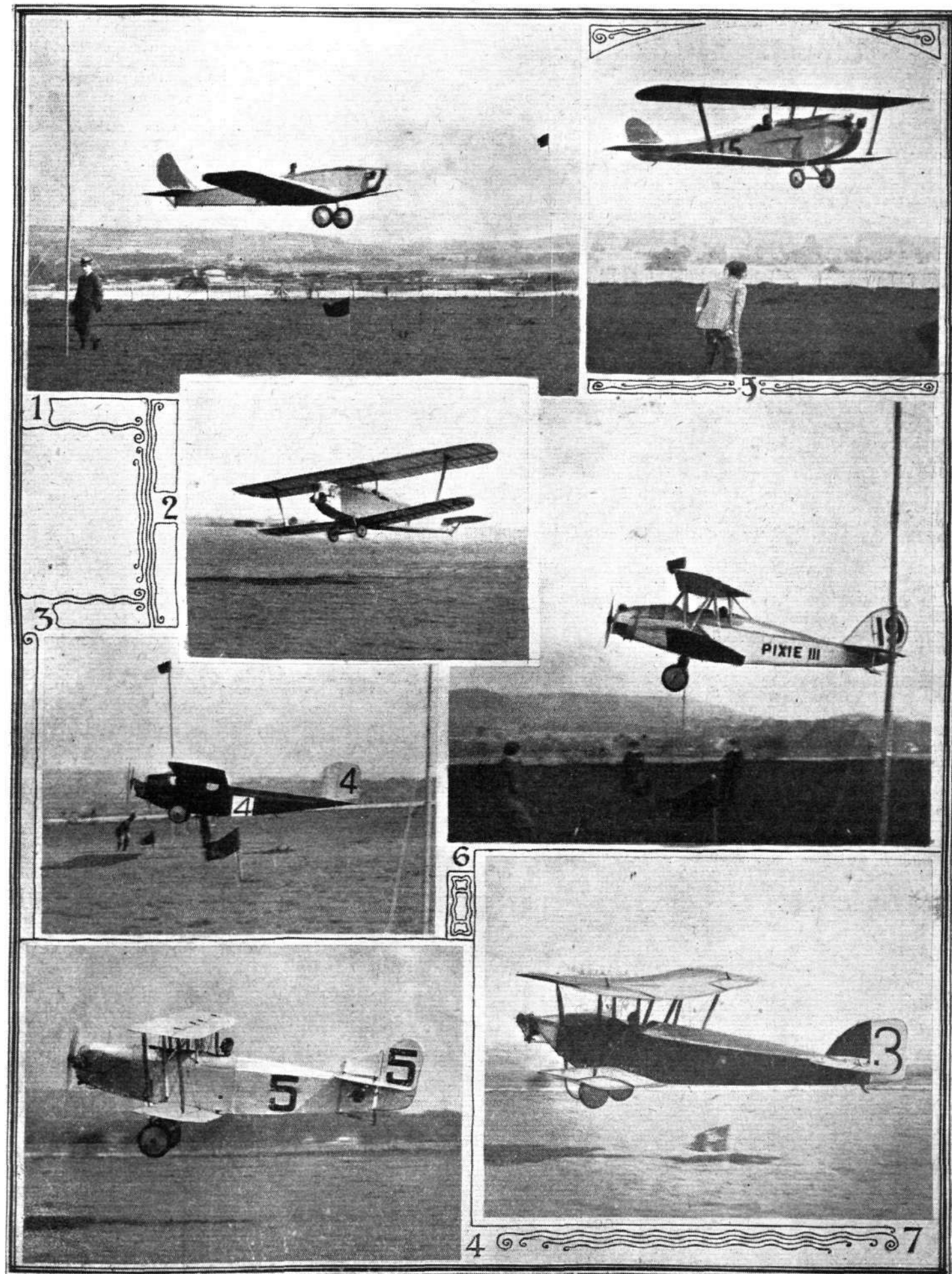
Air Ministry's Second Prize of £1,000. The £500 Prize offered by the Duke of Sutherland for the best get-off and pull-up was won by Uwins on the Bristol monoplane, while Raynham on the Hawker biplane took second place in these tests, being awarded the £100 Prize offered by Capt. C. B. Wilson. The reliability prize of £300, offered by the Society

of Motor Manufacturers and Traders and by the British Cycle and Motor-cycle Manufacturers' and Traders' Union for the greatest number of completed laps was awarded to the



**TAKE-OFF AND PULL-UP TESTS AT LYPNE :** 1, Wheeling Longton's Hawker "Cygnet I" and Douglas's Parnall "Pixie IIIa" back for the take-off tests. 2, The Parnall "Pixie IIIa" clearing the 25-ft. posts. 3, Uwins "hoiking" the Bristol "Brownie" over the posts in the take-off test. 4, Raynham making a landing on the Hawker "Cygnet II." 5, The Parnall "Pixie IIIa" in the pull-up test.





LOW-SPEED FLYING AT LYPNE: 1, Uwins on the Bristol "Brownie." Sir Geoffrey Salmond in the foreground. 2, Longton on No. 14 Hawker. 3, Piercey on the Beardmore "Wee Bee." 4, Gaskell on the Westland "Wood Pigeon." 5, Raynham on the Hawker "Cygnet II." 5, Douglas on the Parnall "Pixie," and 7, Comper on the Cranwell "C.L.A.2."

Cranwell biplane. First place in the race for the Grosvenor Challenge Cup and £100 Prize offered by Lord Edward Grosvenor, was secured by Bert Hinkler on the Avro "Avis," Bristol "Cherub" engine, and Sir Charles Wakefield's £50 Prize went to the second man home in this race, Mr. S. H. Gaskell, who was flying the Westland "Wood Pigeon" biplane with Bristol "Cherub" engine.

The table given on p. 650 shows the number of marks awarded the various competitors at the closing of the Air Ministry Competitions, and is a copy of the scoring board as it appeared at 2.30 p.m. (the official closing time) on Saturday, October 4, except that the sequence has been altered.

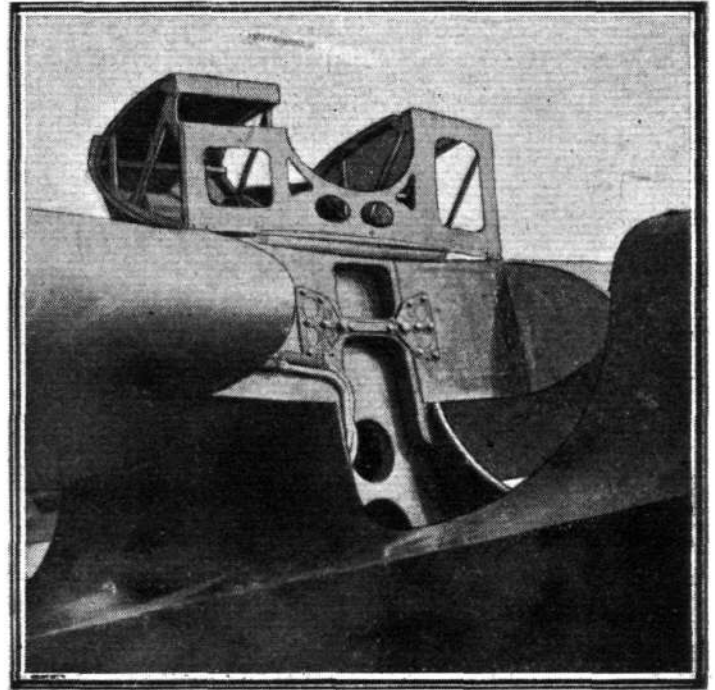
In the table the number of marks gained in speed-range, take-off and pulling up are given, but probably a better idea of the performance can be gained by quoting the actual distances, etc. The shortest distance required in order to clear the 25 ft. barrier was established by Uwins on No. 1 Bristol, who by skilful piloting succeeded in clearing the barrier after a run (from standing start) of only 215 yards. The marks were awarded at the rate of 1 for every yard by which the required distance was less than 450 yards, so that in this test Uwins scored 235 marks. Next best in this particular test was Piercey on the Beardmore "Wee Bee I," whose distance was 235 yards, while third was Raynham with a distance of 250 yards. The other Hawker biplane, piloted by Longton, took 269 yards, and the Parnall "Pixie," piloted by Douglas, required 301 yards to clear the barrier.

In the alighting tests, in which the machines were required to clear a barrier 6 ft. high, and pull up in the shortest possible distance, the best performance was that of the Hawker biplane flown by Longton, which came to rest only 66.7 yards from the barrier. In this test 1 mark was awarded for every yard by which the distance required to come to a standstill was less than 150 yards. The second best pull-up was made by Douglas on the Parnall "Pixie" (No. 19) with a distance of 70 yards. Third was Raynham on the second Hawker biplane, with a distance of 72.67 yards. The Cranwell biplane took 99.4 yards, and the Bristol "Brownie" 102.6 yards. The winner of the main competition, the Beardmore "Wee Bee I," took the longest distance to pull-up, as might be expected from its design, requiring 124 yards before coming to a stand-still.

In the low-speed test the slowest machine proved to be the Parnall "Pixie" flown by Douglas, whose minimum flying speed was as low as 37.22 m.p.h. In connection with the low-speed tests it should be pointed out that these were flown in sets of four, two up-wind and two down-wind laps, and that this fact, although theoretically not affecting the results, actually did have the effect of increasing the low speed somewhat, the course being rather a difficult one, the ground being so sloped that the up-wind laps had to be slightly climbed, while in the down-wind laps the pilots were going down hill. The next best figure for slow flying was obtained by Raynham on the Hawker biplane (No. 15) whose speed was only 37.42 m.p.h. Uwins on No. 1 Bristol "Brownie" was third

with 38.73 m.p.h. Piercey got his low-speed down to 39.66 m.p.h. on the Beardmore "Wee Bee," and Longton on No. 14 Hawker "Cygnets" was highest with 43.95 m.p.h.

With regard to the high-speed test, it is significant that but two machines were able to pass this, the rest having failed to score any marks owing to the fact that their engines would not stand the strain of doing two sets of five laps each. Several machines succeeded in doing their first set of five,

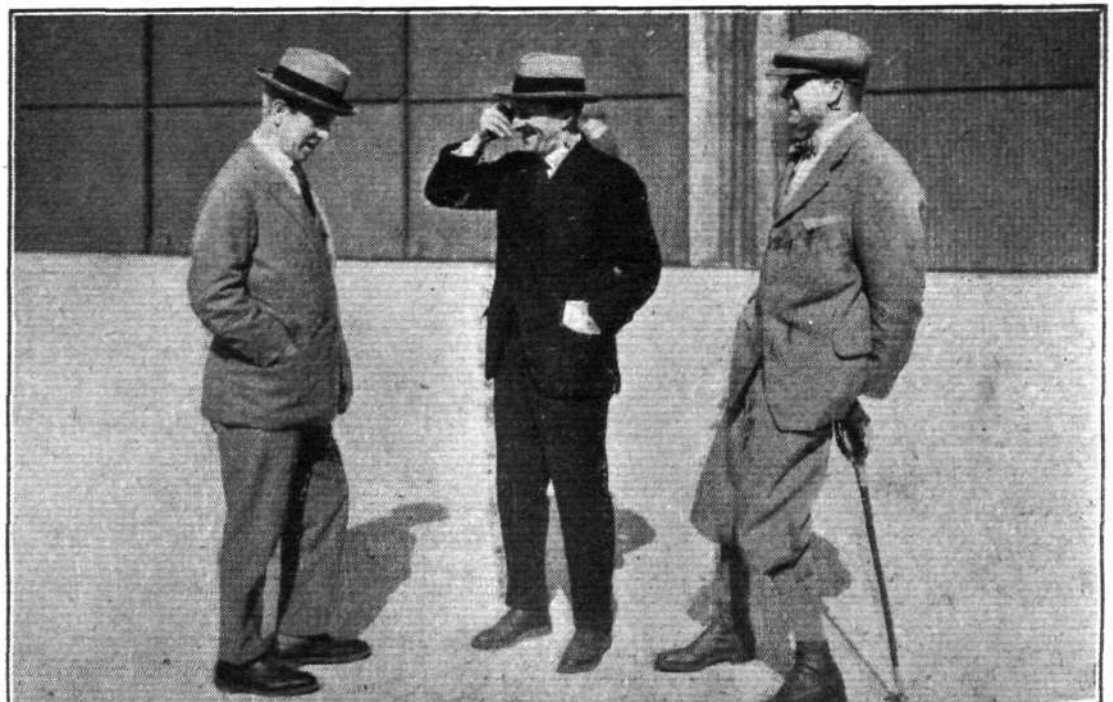


The "Office" of the Beardmore "Wee Bee I" is reached by hinging back the central portion of the leading edge, as shown in this photograph.

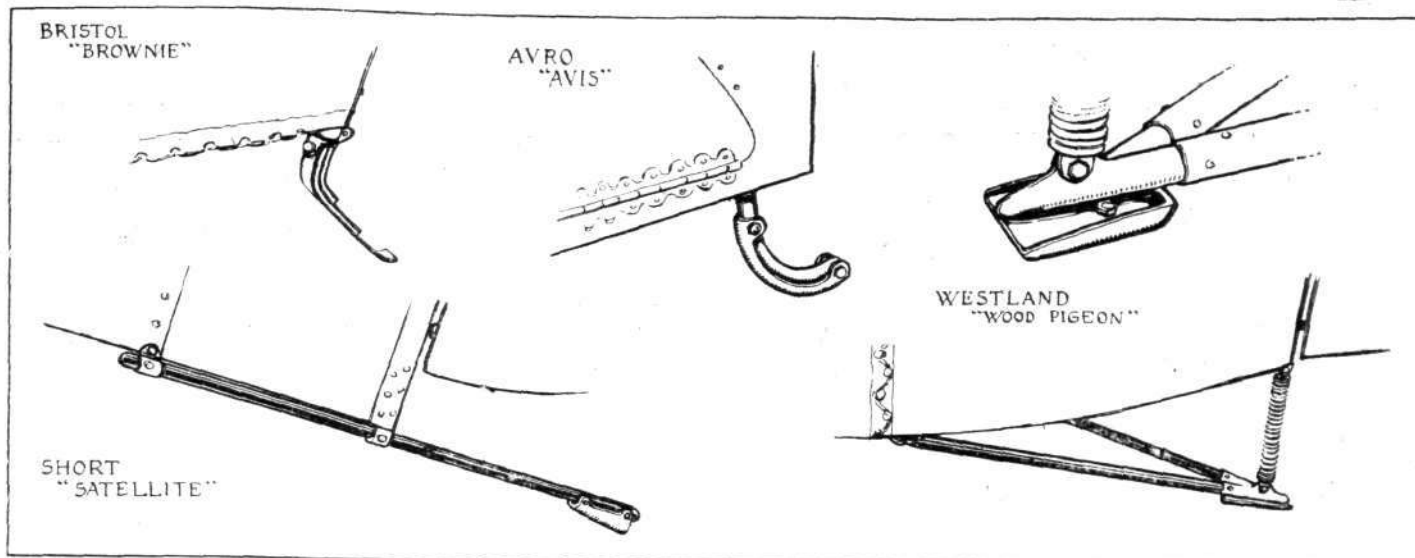
but had to abandon the attempt during the second set. Thus only Piercey and Uwins got through the complete high-speed test, and consequently theirs are the only performances to be officially "logged." Piercey's top speed average was 70.11 m.p.h., but it should be pointed out that this was established early in the week, and that at the time a strong wind was blowing, while the fact that Piercey was not going "all out" should also be taken into consideration. Somewhat similar remarks also apply to Uwins, whose top speed was logged at 65.19 m.p.h.

The week's best officially recognised performances may be briefly summarised as follows: Greatest top speed: "Wee

Discussing the prospects at Lympne: Mr. A. V. Roe, General Brancker, and Mr. Hubert Scott-Paine in characteristic attitudes.







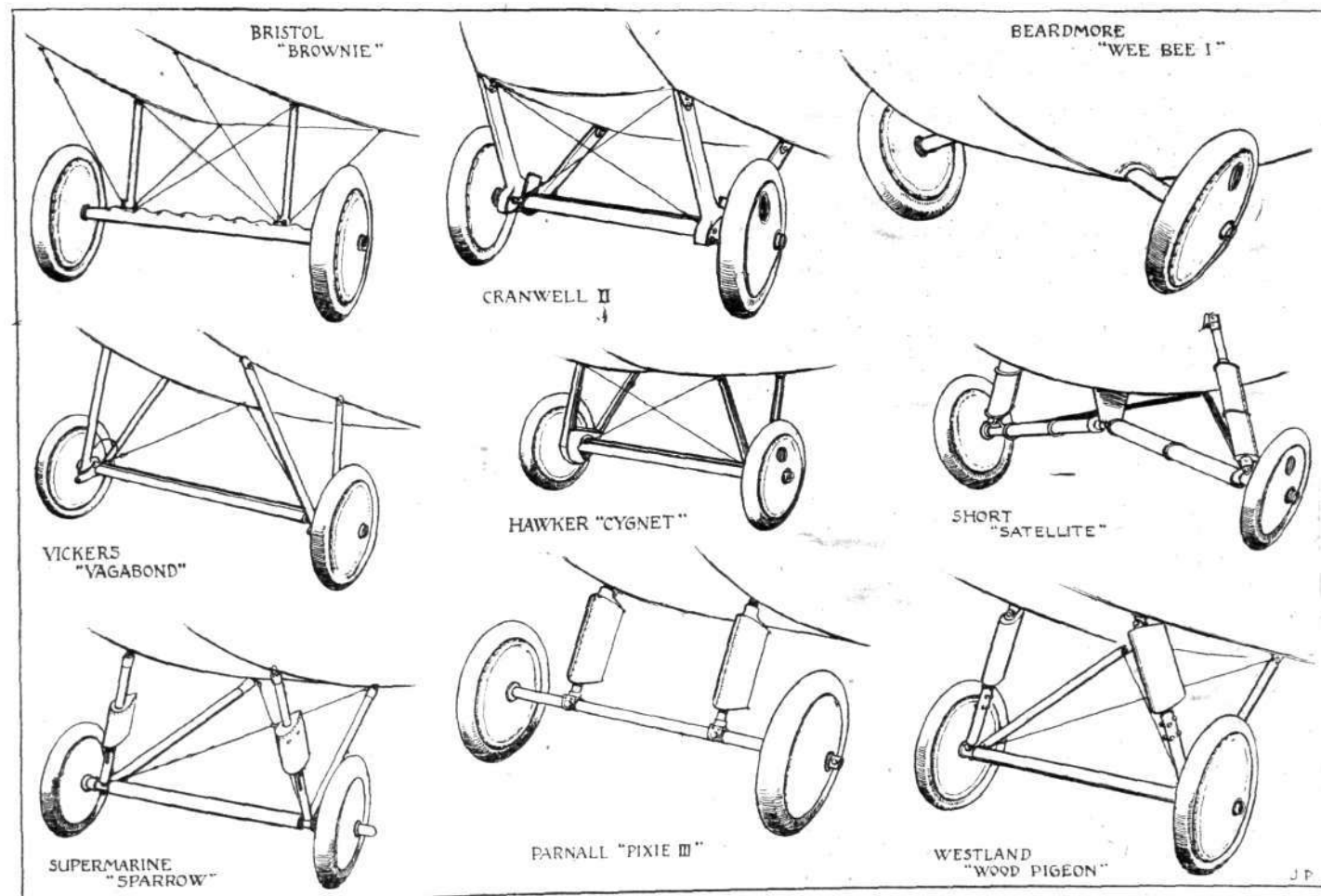
**A FEW UNORTHODOX TAIL SKIDS ON LYMPNE MACHINES:** The Bristol is a leaf-spring and the Avro a bent tube. The Short has a long straight, tubular skid, and the Westlands a horizontal Vee with compression spring to the stern-post.

Bee" (70.11 m.p.h.); lowest slow-speed: Parnall "Pixie IIIA" (37.22 m.p.h.). Shortest take-off: Bristol "Brownie" (215 yards). Shortest pull-up: Hawker "Cygnet" (66.7 yards). Longest time in air: Cranwell "C.L.A.2" (17 hours 53 mins. 18 secs.). Greatest distance flown: Cranwell, "C.L.A.2" (767½ miles).

Last week we were able to record the progress being made up till Tuesday evening. Although the actual results of the Lympne competitions are outlined above, it is felt that our readers would appreciate a more detailed reference to the work

done during the week, and we therefore propose to give below a brief day-to-day summary of the various attempts made by the competitors to gain the upper hand in the different sections of the competitions, commencing with Wednesday morning, October 1.

Wednesday, October 1.—The weather conditions being favourable, the slow-speed course of 500 yards was marked out on the aerodrome by red flags on short poles, taller poles similarly marked being erected at each end of the course. Competitors were required to fly four laps of the course, two



**UNDERCARRIAGES AT LYMPNE:** This set of sketches shows representative types of chassis as fitted on nine of the machines. The Vickers "Vagabond," the Cranwell "C.L.A.2," and the Hawker "Cygnets" have normal rubber-sprung undercarriages, while the Westland "Wood Pigeon" and the Short "Satellite" have oleo "legs." The Supermarine "Sparrow" has telescopic tubes with rubber cords over crutches, and the Beardmore "Wee Bee" a single bent-tube axle without springing. The Bristol "Brownies" have single chassis struts braced fore and aft by wire, and the wheels are carried on a cantilever axle. So, also, are the wheels of the Parnall "Pixie IIIa," but in the latter the chassis struts themselves are cantilevers, with compression-rubber shock absorbers.

up-wind and two down-wind. Their speed on each lap was taken, so that any slight wind blowing should not, theoretically, affect the results. In practice the wind does, as a matter of fact, somewhat detract from the low speeds that



**AT THE OLYMPNE LIGHT 'PLANE TRIALS:**  
Lord Ed. Grosvenor (right) and Mr. W. H. Longton,  
discussing prospects.

can be reached, especially over the particular course, which was unavoidably on a slight slope, the machines having to climb up-wind and to sink down-wind, with the wind on their tail. Nevertheless, there is no reason to believe that the results obtained were other than very closely representative of the actual speeds of the various machines. The most "emotioning" performance in these tests was that of Squadron-Leader Longton, who flew his Hawker "Cygnet I" (British Anzani engine) crabwise along the course, all the while keeping his machine inside the boundaries marked by the red flags. That he could have gained anything in this way appears very doubtful, since for low speed what one wants is maximum lift. By letting his machine travel partly side-

ways it would seem that Longton must have lost lift, and consequently have had to fly somewhat faster than would have been necessary in straightforward flying. His average slow speed worked out at 43.95 m.p.h.

No. 3, the Cranwell biplane, flippantly nicknamed "The Honeymoon Express," had considerable difficulty in getting his speed down, partly owing to the fact that this machine does not accelerate very quickly, and that, therefore, it requires rather careful handling when near the stalling speed. The up-wind lap was successfully covered, but on the down-wind lap a wing tip touched a flag and, incidentally, nearly hit Air Vice-Marshal Sir Geoffrey Salmond, who was standing at the side of the course, an interested spectator. Sir Geoffrey managed to dodge the machine by falling flat on the ground, and when the machine had passed he calmly got up and continued to watch other competitors. The Cranwell machine in the meantime continued down the course, and ultimately had to forced-land, fortunately without damage.

The Parnall "Pixie IIIA," piloted by Squadron-Leader Douglas (whom we erroneously "wiped out" of the competition in last week's issue of *FLIGHT*, owing to a statement made by Mr. Bolas on the Tuesday evening after both Parnall machines had suffered engine damage, to the effect that he would withdraw from the competitions), was rather unlucky in the slow-speed test, and touched the ground, afterwards fouling a mark post and damaging a wing tip.

Piercey flew the Beardmore "Wee Bee I" perfectly straightforwardly and without any "wobble," appearing to require little if any aileron control although flying very close to the stalling angle. He seemed to fly slower than any of the other machines, and when the figures became available this actually proved to be the case.

Raynham, on the Hawker "Cygnet II," with A.B.C. "Scorpion" engine, also flew his laps perfectly steadily, but did not give the appearance of flying very slowly, although this was probably accounted for by the small size of his machine, a small aeroplane always appearing faster than a large one actually flying at the same speed. In point of fact, his speed was to all intents and purposes the same as that of Uwins on the Bristol.

Uwins on the Bristol "Brownie," with "Cherub" engine, flew a very good low-speed course, the machine appearing well under control the whole time, but probably giving an impression of being slower than it actually was.

No. 5, the Westland "Wood Pigeon," also attempted the slow-speed test, but had to land after one lap, so that his performance was not logged.

In the afternoon of Wednesday, October 1, the race for the Air League Challenge Cup was flown by three flights of Sopwith "Snipe," from Hawkinge, Biggin Hill, and Kenley respectively. The result of this race was recorded in last week's *FLIGHT*, Hawkinge becoming holders of the Cup for one year.

Pilot-Officer Broadway had a miraculous escape when his machine crashed, and every one had expected that

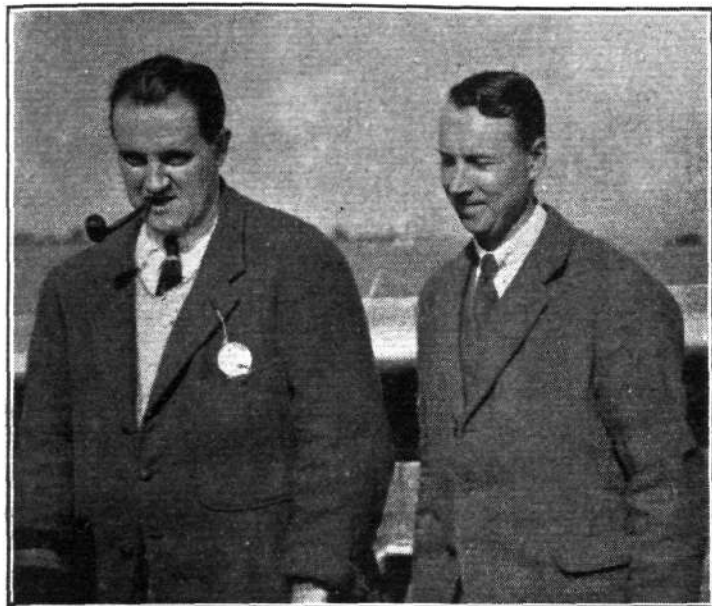


General Sir  
Sefton Brancker  
looks thoroughly  
pleased after a  
flight with Capt.  
Biard in the  
Supermarine  
"Sparrow."



a spare pilot would take his place. A Flight-Sergeant asked "Who will take Mr. Broadway's place, sir?" The reply was short and to the point: "Mr. Broadway." After the race Flight-Lieut. Mann gave one of the most marvellous exhibitions of trick flying ever seen in this country. Covering the aerodrome in three loops, the tops of which were some 1,000 ft. above the ground and the bottoms of which were not more than about 10 ft. from grass, he showed absolutely masterly skill, although many considered the performance somewhat foolhardy.

After the end of the Air League Challenge Cup Race the light 'planes commenced a series of take-off and pull-up



**Mr. Roy Fedden, designer of the Bristol "Cherub" engines, talks things over with Major Mayo.**

tests in the gathering dusk. The figures obtained in the pulling-up trials were: Longton on No. 14, 83.3 yards; Comper on the Cranwell, 99.4 yards; Uwins on the Bristol, 101 yards; and Raynham on No. 15 Hawker "Cygnets," 111 yards.

In the slow-flying tests Piercey led with a speed of 40.67 m.p.h.; Uwins flew at 41.24 m.p.h., Raynham at 41.38 m.p.h. and Longton at 43.95 m.p.h.

The only two high-speed tests completed by closing time were by Piercey at 70.11 m.p.h. and by Uwins at 65.19 m.p.h.

Thursday, October 2.—Splendid weather favoured the Lympne competitions, and a great deal of work was put in by several of the competitors. Perhaps the most notable event was the failure of Raynham by a very narrow margin to complete his high-speed tests of two sets of five laps each. The first set of five was successfully completed, and in the second set the A.B.C. engine seemed to be running very well. On the ninth lap, however, disaster overtook Raynham, a thrust race running hot and putting the engine out of commission. That this sort of thing is the kind of luck Raynham habitually has did not make the fact any less regrettable, and everybody, his rivals more than anybody, was sincerely sorry to see Raynham put back in the high-speed tests. However, with his usual determination he set to work on the damaged engine, and in the afternoon was carrying out landing tests. Longton on the other Hawker completed one set of five, but his engine failed in the second set.

During the day the competition had the appearance of being reduced to a fight for first place between Uwins on the Bristol "Brownie" and Piercey on the Beardmore "Wee Bee I." Excitement grew intense as the two strove for a few more marks, and at the end of the day's flying Uwins had actually got slightly ahead, with a total of 538.25 marks against Piercey's 520.8 marks. Take-off and landing tests were the order of the day, while the Cranwell kept plodding along, piling up time in the air and scoring on number of laps covered. Continuing until dark, Mr. Comper landed his "C.L.A. 2" by the aid of the aerodrome lights, having completed 10 hours 31 minutes 12 seconds' flying and covered a distance of 450 miles. His plucky effort was greeted with cheers as he landed.

During the afternoon the Parnall "Pixie" No. 18 came out with its top plane removed, thus converting it into a

monoplane, and did some very pretty stunt flying. Douglas, in the other Parnall machine (No. 19) made a forced landing on the southern side of the aerodrome and barely escaped running into the fence, almost in the exact spot where Mr. Broadway had crashed on the "Snipe" the day before. However, his machine suffered no damage and was brought back to its shed.

Sqdn.-Ldr. Payn brought out the Vickers "Vagabond" and did some stunts, including loops. Biard brought out the Supermarine "Sparrow" and made a short flight. Coming in with his engine stopped, he had literally to zig-zag in between the other machines, but he made a perfect landing and handled his machine extremely well.

By the end of the day's flying, in addition to the total marks already quoted for Piercey and Uwins, the two Hawker machines had passed all except the high-speed tests, as had also the Parnall "Pixie." There was keen rivalry between Uwins and Piercey to gain a few extra marks, and it was believed that if the weather was suitable next morning Piercey would try a new high-speed test. Raynham had done 125 miles in the 10 hrs. total, and put in 3 hrs. 12 mins. 12 secs., so that with any luck he could still qualify and be well in the running.

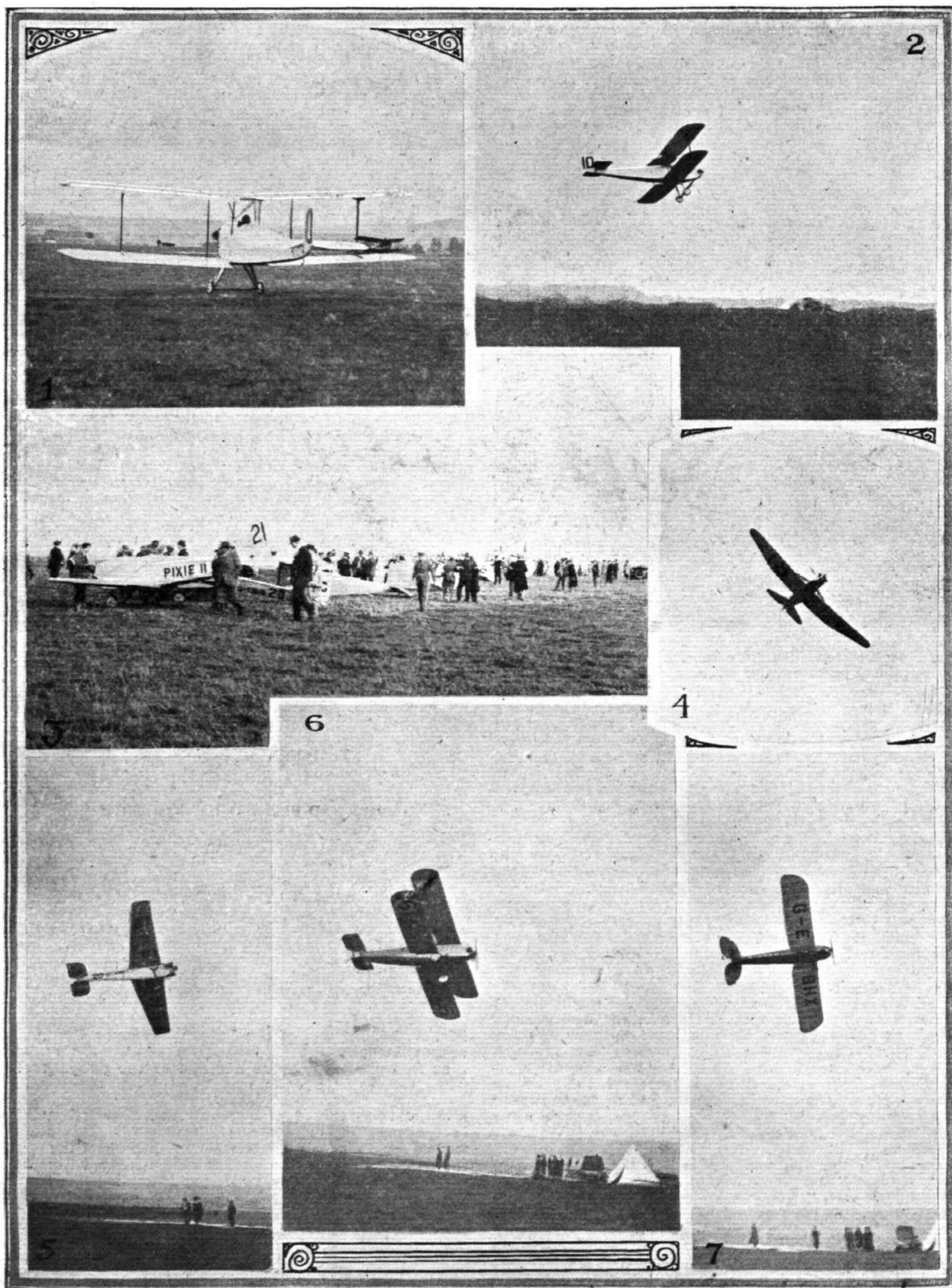
Just before 6 p.m. Mr. Bulman arrived on the "Hurricane" monoplane designed and built by the Royal Aircraft Establishment Aero Club for last year's light 'plane meeting. The machine, which has now been fitted with a Bristol "Cherub" engine, appeared tremendously fast. Mr. Bulman had had rather an adventurous journey across from Farnborough. When well on the way he discovered that his carburettors were flooding, and in order to save his petrol (and incidentally reduce fire risk) he carried on by letting his float chambers



**Mr. D. M. Davies, of the Falcon Airscrew Company, seems pleased at the fact that whatever were the troubles at Lympne, they were not due to the propellers.**

fill up, and then turned off the supply until the small quantity in the carburettors was nearly exhausted. This scheme worked for a time, until, in fact, Mr. Bulman kept the petrol turned off a little too long. His engine stopped from lack of fuel, and it was only by diving something like 800 ft. that he got his engine going again. When it did pick up he was approximately 100 ft. above country totally unsuitable for a forced landing!

Friday, October 3.—Again excellent weather favoured the competitions, and the two Hawker machines were out bright and early putting in laps. Raynham ran out of petrol, owing to a leak in the carburettor, and Longton broke something like three valves in one lap. During the day there was a great deal of flying by the machines eliminated from the competitions, but which were to take part in Saturday's race for the Grosvenor Challenge Cup. A second Westland biplane, No. 6, arrived overnight and was erected and flying by about noon on Friday. Mr. Barnard was busy carrying passengers in the D.H.51, among his passengers being Lord



THE LIGHT 'PLANE RACE FOR THE GROSVENOR CHALLENGE CUP : 1 shows the winner, Bert Hinkler, on the Avro "Avis" (Bristol "Cherub"), starting off in the race, and in 2 he is seen crossing the finishing-line first. 3 shows the machines lined up for the race, and the remaining photographs give a good idea of the manner in which, in spite of the low-power engines, the pilots took their corners. 4 shows Douglas on the Parnall "Pixie IIIa"; 5, Bulman rounding the aerodrome tent on the Farnborough "Hurricane"; and 6, Payn on the Vickers "Vagabond." In 7 Cobham is seen standing the de Havilland 53 on its wing tip while rounding the aerodrome turning point.



and Lady Grosvenor and General Sir Sefton Brancker. With the latter as passenger Barnard lopped and stunted the machine, so that one had the somewhat amusing sight of the Director of Civil Aviation being stunted in an aeroplane for which an airworthiness certificate had been refused.

Among the visitors to Lympne on Friday was Herr Robert Thelen, of the Albatroswerke, and the chief designer of the same firm, Herr Schubert, who had come over from Berlin to watch our light 'planes performing.

Hinkler brought out the Avro "Avis" with a new ungeared "Cherub" and did some beautifully banked turns and successions of loops. The machine handled extremely well and was generally commented on. Incidentally its finish, a special "Titanine" doping scheme, was admitted to be the best to be seen at Lympne. Later in the day Hinkler took up General Sir Sefton Brancker, and later Air Vice-Marshal Sir Geoffrey Salmond. Both were delighted with the behaviour of the "Avis."

In the evening Courtney brought out the single-seater "Pixie" with 1,000 c.c. Blackburne engine, and went for a flight. As he was approaching the aerodrome his propeller came off, but he managed to make a safe landing.

During the day Uwins managed to reduce his slow speed to 38.73 m.p.h. and Piercey got his Beardmore down to 39.66. Raynham beat them by flying at 37.42, and Douglas best of all with 37.22 m.p.h. If Raynham could complete his high-speed test on Saturday morning he would be a likely winner as he had made good marks on slow speed and on getting off.

*Saturday, October 4.*—The two Hawkers were out early lapping, and later did some take-off and pull-up tests. Longton made an attempt at high speed, but valve trouble forced

him to give up. Piercey brought out the "Wee Bee," as there was now danger of Raynham overtaking him. In his first set of five he averaged slightly over 79 m.p.h. He was doing, if anything, slightly better in the second set, but when about 2 miles from home, on the last lap, his engine gave up the ghost, having broken a big-end. Thus he was out of the running, and there was grave danger of losing first place to Raynham, whose high speed was considered to be such that if his engine stood up to the work he would have a fair number of marks in hand on the total.

Raynham came out on No. 15 shortly before mid-day and commenced his high-speed laps. During the first set of five he was flying strongly, and his speed was believed to be about 75 m.p.h. During the second set of 5, however, while on the ninth lap, his engine also failed, and thus what had begun to look like an 11th-hour victory was suddenly turned into defeat. The collapse was spectacular in the extreme, and everyone was extremely sorry, the Hawker crews having worked like slaves all the week and had the most appallingly bad luck. Raynham's failure made Piercey's position as first fairly secure, and when closing time came there had been no change.

The Cranwell biplane kept flying almost up to the last minute, and succeeded in securing the greatest number of laps of the course, much to everyone's satisfaction, as the prize would, at any rate, help to pay the expenses incurred by the Cranwell amateurs.

There are a number of incidents and happenings during the Lympne week which deserve to be mentioned, but space does not permit of doing so this week. We hope, however, to be able to relate some of the events in Light Plane and Glider Notes in subsequent issues of FLIGHT.

## LIGHT 'PLANE RACE FOR GROSVENOR CHALLENGE CUP

No less than 19 light aeroplanes, with an engine capacity not exceeding 1,100 c.c., had been entered for the race for the Grosvenor Challenge Cup, which was flown at Lympne on the afternoon of Saturday, October 4. Out of these 14 faced the starter and 9 completed the course. The machines which failed to put in an appearance were: No. 3, the Cranwell biplane, whose engine was not in a condition to run for 100 miles all-out; No. 4, the Beardmore "Wee Bee," whose engine had broken a connecting rod; No. 12, the Blackburn "Bluebird," which did not get to Lympne in time; No. 15, Raynham's Hawker biplane, whose engine had "gone west"; and No. 19, the Parnall "Pixie III," which was somewhat similarly afflicted. The reason why No. 1, the Bristol "Brownie," was not entered was that her tank capacity was insufficient for 100 miles.

The machines actually on the starting line are indicated in the attached table, as are also the handicap allowances made for the various entrants. All got away on the drop of the flag except No. 16, who lost some precious minutes getting his engine going. During the first lap the positions remained unchanged, except that No. 9, the Supermarine "Sparrow," overtook No. 6, the second Westland biplane, a position which he held up to the sixth lap, when he was in turn overtaken by No. 2, the Bristol "Brownie." Longton on No. 14 abandoned after the first lap, his valves having given out again. (It was rumoured that, contrary to regulations, Longton holds shares in a valve-manufacturing company, and that this explains the fact that he broke so many valves during the week.)

The pilots all, or nearly all, made very pretty banked turns, some of which are shown in the accompanying page of photographs. No. 16, the Vickers "Vagabond," came down in the fifth lap, and the "Viget" in the fourth. The latter machine had made some very spectacular turns, and was greatly missed from the rest of the programme. James on No. 7 also came down in the fifth lap, as did also Bulman on the "Hurricane." With the exception of Longton, all these landed out in the country. At the end of the seventh lap it became obvious that the handicapping was such that the race was a gift to either No. 5 or No. 10, the other competitors being roughly one lap behind. As the machines hove in sight it was seen that No. 10 had got the lead, and there was general satisfaction

when Hinkler crossed the line as winner on his Avro "Avis," with Bristol "Cherub" engine. Second was Gaskell on the Westland "Wood Pigeon" (No. 5), the rest coming in in the following order, although after a considerable interval: 2, 9, 18, 8, 21, G-EBHX, and 6. The race was generally appreciated, and it is thought that next year we shall see extensive racing with light 'plane two-seaters and single-seaters. In point of fact, this form of racing, now that the machines are in existence, can be run very cheaply, and it certainly provides excellent sport.

Table of machines which actually started in Grosvenor Cup Race.

No.	Machine and entrant.	Pilot.	Handicap allowance.
			mins. secs.
5	Westland "Wood Pigeon," Robert Bruce.	Gaskell	32 59
10	Avro "Avis," A. V. Roe ...	Hinkler	26 05
6	Westland "Wood Pigeon," P. W. Petter.	Winstanley	24 38
9	Supermarine "Sparrow," Comdr. J. Bird.	Biard	23 15
16	Vickers "Vagabond," Douglas Vickers.	Payn	21 53
2	Bristol "Brownie," Sir Stanley White, Bart.	Campbell	15 40
18	Parnall "Pixie III," Harold Bolas.	Haig	13 25
8	Short "Satellite," H. O. Short.	Parker	12 20
HX	D.H. 53, Capt. G. de Havilland.	Cobham	11 17
HN	Vickers "Viget," Douglas Vickers.	Scholefield	11 17
14	Hawker "Cygnet II," F. Sigrist.	Longton	10 15
7	A.N.E.C. II, S. J. Beckett.	James	5 46
20	R.A.E.Ae.C., "Hurricane," P. N. G. Peters.	Bulman	3 46
21	Parnall "Pixie II," George G. Parnall.	Courtney	Scratch

## THE DINNER AT HOTEL IMPERIAL, HYTHE

ON Saturday evening, October 4, all who had taken an active interest in the Light Aeroplane Week at Lympne gathered together for a final dinner in the great dining hall of the Hotel Imperial, Hythe. It was a fitting conclusion to a

memorable week, during which nearly everyone connected with civil flying had gathered together under one hospitable roof, and lived almost as one happy family. If only the tale could be told in detail of the midnight gatherings in the

smoking-room, when designers, pilots, directors, Aero Club officials, aeronautical journalists, pioneers, and Air Ministry experts, lit and re-lit their reeking pipes and discussed "c.c." and the prospects of light fly-abouts, and every other subject above the earth! But those meetings—and especially one incident in which a black and yellow umbrella played a prominent part—will only live in the memory of those who took part in them. The banquet was necessarily more formal and less enthralling, but behind the words of the speeches one could catch the tone of the enthusiasm, the good fellowship, and the good sportsmanship which had reigned throughout the meeting.

When the waiters, most competent fellows who wrestled heroically with a task beyond the powers of their numbers, had more or less gratified the solid and liquid requirements of the diners, the Chairman, Col. F. McClean, proposed the loyal toast, and then read out telegrams from the Duke of Sutherland and Mr. Leach, past and present Under-Secretaries for Air, regretting their inability to be present. At once the thought arose, which aeroplane is the Duke going to buy? Then the Chairman proceeded with his speech. He admitted that on the second day of the meeting it had seemed as if it could not be a success. Then a change had come over things, and success had been achieved, and next year he was sure that the light aeroplane would be a finished article. He expressed his sympathy with those who had failed to pass the elimination trials, especially with those who had got within an inch of success. There had been one brilliant performance, when a little band of amateurs "had told the trade to go to the devil." The success of the Cranwell machine was one of the most marvellous things that had ever happened in aviation. Col. McClean remarked that the Royal Aero Club had offered no prize for this meeting—(groans!), but in the prize fund & subscriptions of £1 balanced one subscription of £x. Then, beaming genially around, he reminded his hearers that earlier this year the Royal Aero Club had offered prizes for a race, and there had been little or no response from the manufacturers. (Laughter.) Next it was his pleasant duty to distribute the prizes, but he warned the winners that the envelopes mostly contained I.O.U.'s, which he (the Chairman) had declined to sign.

Then Mr. Chorlton and Mr. Piercey were summoned to the high table to receive the Air Ministry's first prize, while Sqdn.-Ldr. Barnwell and Mr. Uwins were handed the other envelope. The latter pair were detained to take charge also

of the Duke of Sutherland's prize, and as they retired Messrs. Sopwith and Raynham were called up for Capt. Wilson's prize. There were great cheers as this pair of veteran pioneers (very well preserved veterans, too) walked up together, and the cheering rose still higher as Mr. Sopwith handed the envelope to Mr. Raynham. The Chairman insisted on all five Cranwell representatives coming up together for their prize, and at that point the casualties among the hotel spoons must have nearly equalled the engine casualties of the past week.

Lord Edward Grosvenor presented his own cup and an envelope to Mr. Bert Hinkler, who had to go up unsupported and blushing despite clamorous yells for "A. V." Mr. Gaskell received the second prize.

Then Sir Sefton Brancker was called upon to present the King's Cup to Sir Charles Wakefield. Sir Sefton read out an anonymous postcard which he had received, which protested cuttingly against the continuous allusions in the press to the movements and doings of Sir Vice-Marshal Sir Sefton Brancker, K.C.B., A.F.C., etc., and concluded by saying "Good wine needs no bush." Sir Sefton delighted the company by saying that he quite agreed with his anonymous correspondent. He recounted Sir Charles Wakefield's past services to the cause of flying, and hoped he would be found equally generous as in the past. Sir Charles, in reply, reminisced very pleasantly, told of his extravagant prophecies in the past that aeroplanes would one day fly at 120 m.p.h. with a pardonable chuckle in the "I told you so" vein. He paid handsome tributes to the work of those who produced the D.H.50 and of Mr. Cobham, who flew it in the race; while of those who had taken part in the present meeting, he once more indulged in prophecy and foretold that future ages would say, "They builded better than they knew."

Mr. Chorlton then commented on the world-wide significance of the meeting just concluded, and praised the way in which the Royal Aero Club had managed it. Col. Darby, in response, dwelt on the sporting spirit of all the competitors, especially those who had suffered from the operation of the rules.

Finally, Mr. Sopwith, proposing the health, not of the Chairman, but of "Frank McClean," said there were two outstanding facts about the meeting. There had been no injuries to anybody, and there had not been a single "dud" machine. He had never known a meeting like that before.



The end of a perfect day—and of the Lympe meeting.



# AIR MINISTRY NOTICES

### Czechoslovakia : Prohibited Areas

It is notified :—

1. The following additional prohibited area has been declared in Czechoslovakia :—

(Note.—The names of places are given first in the Czechoslovak form, followed in brackets by the form, where different, found on the Austrian Staff maps quoted.)

An area around Leopoldov (Mestecko) which is enclosed by the irregular pentagon formed by the following places:—Lovcice (Locz), Malzenice (Maniga), Drahovce (Drahocz), Horne Otrokovce (E. Attrak), and Horne Riskovce (Recseny).

Approximately, the dimensions of this area are  $9\frac{1}{2}$  miles E. to W. by 10 miles N. to S., and its centre is in a position latitude  $48^{\circ} 26' N.$ , longitude  $17^{\circ} 47' E.$  of Greenwich ( $= 35^{\circ} 27' E.$  of Ferro), *i.e.*, 10 miles E.N.E. of Tyrnau.

2. The prohibited area around Moravska Ostrava (Mährisch-Ostrau), the existence of which has been previously notified, is formed on the north and east by the State frontier, the remaining sides being from the railway junction of Neuhoř, by way of the railway as far as Šonan (Schönhof), thence by straight lines to the S. border of the temporary pond of Paskan, Königsberg, Hultschin, and Hat.

Approximately, the dimensions of this area are  $18\frac{1}{2}$  miles E. to W. by  $12\frac{1}{2}$  miles N. to S., and its centre is in a position latitude  $49^{\circ} 51' N.$ , longitude  $18^{\circ} 22' E.$  of Greenwich ( $= 36^{\circ} 02' E.$  of Ferro).

3. Maps showing the actual extent and position of the prohibited areas in Czechoslovakia may be seen on application to the Secretary (D.D.A.T.), Air Ministry.

(No. 77 of 1924.)

Holland : Bussum Landing Ground and Rotterdam  
Aerodrome

It is notified :—

1. *Bussum*.

Bussum landing ground has been abandoned and is no longer available for landing.

2. Rotterdam (Waalhaven).

## Lord Thomson's Tour

LORD THOMSON, Minister for Air, has completed his tour of the Middle East, during which he has covered over 2,500 miles by air, and has thus been able to inspect the principal air centres in Northern Iraq, Palestine, and Egypt within the space of eight days. He was very impressed with the splendid organisation of the whole trip—the staff work and ground organisation—and the enthusiasm and efficiency of the R.A.F. He arrived at Alexandria on September 22, and left Cairo by air at dawn on the 24th for Amman (334 miles), where, after an inspection of the aerodrome, he dined with the Emir Abdullah of the Transjordan. On the 25th he flew 532 miles to Baghdad in time for luncheon with Sir Henry Dobbs, the British High Commissioner for Iraq, and on September 27 he flew to Mosul, where he slept the night. He continued the flight next day to Zakha, on the Turco-Iraqi frontier, and proceeded thence to Erbil, the ancient Arbela, where he lunched, and to Kirkuk, where he spent the night, returning to Baghdad on September 2, *via* Sulimanie. At all these points the Minister landed and inspected the detachments of the Royal Air Force.

At Baghdad the Minister dined with King Feisal and conferred with the military and air authorities, and left at dawn on September 30 for Amman. On October 1 he flew to Ramleh and motored back to Jerusalem, where he was the guest of Sir Herbert Samuel, the High Commissioner for Palestine. On October 2 he left Government House, on the Mount of Olives, at 5 a.m., motored to Ramleh, and from there flew to Heliopolis in 3¼ hours. After luncheon he continued his flight to Abukir, which he reached the same afternoon, and arrived at Sanstefano, near Alexandria, within 9½ hours of leaving the Mount of Olives, making 5½ flying hours to cover approximately 370 miles.

## Dutch Flight to Batavia

THE Amsterdam-Batavia (Dutch East Indies) flight referred to in our issue of August 14 last, which was to be undertaken by the Royal Dutch Air Transport Co. ("K.L.M."), and which commenced on October 1, has come to an end somewhat early in the flight. The three "Flying Dutchmen," T. van der Hoop, M. H. van Weerden Poelman, and M. P. A. van den Broeke, left Amsterdam on the Fokker F.7 (Rolls-Royce "Eagle IX") at 8.30 a.m. on Wednesday, October 1,

In the interests of the safety of civil aircraft, the tops of the masts of ships lying alongside the south bank of the Waalhaven dock (1.2 kms. N. of the Waalhaven aerodrome) will be provided with a bright light from sunset to sunrise, in every case where the mast tops are more than 8 m. (26 ft.) above the level of the water.

(No. 86 of 1924.)

## GROUND ENGINEERS

**Avro 504, 536, 548 and 552 Types Aircraft : Drilling of Main Plane Spars.**

1. THE attention of Ground Engineers is directed to the necessity for observing the following inspectional precautions during overhaul of the main planes fitted to the above types of aircraft.

2. The packing blocks on the top and bottom of the spars should be removed and the stripped spars carefully examined.

Special points to be noted are :—

(a) That the vertical holes through the packing blocks at the interplane strut fittings do not penetrate the spar itself.

(b) That no cases of double drilling of the vertical holes for the bolts carrying the aileron control pulley have occurred.

3. After such inspection new packing blocks should be temporarily fitted in position in such a manner that they may be drilled and then removed so that the drilling may be inspected. The packing blocks should then be fitted in the approved manner.

4. The horizontal and vertical spar drillings which take the bolts securing the outer rear strut socket fittings (top and bottom) should be examined to see that these drillings do not cut into one another.

5. No certificate of airworthiness will be issued or renewed in respect of any aircraft of the above types, constructed or overhauled subsequent to the date of issue of this Notice unless the above precautions have been observed.

(No. 9 of 1924.)

and arrived at Prague 7 hrs. 25 mins. later. They left Prague next morning for Belgrade. On Friday, October 3, they met with radiator trouble on the way from Belgrade to Constantinople, and were forced to land at Philippopolis, and in so doing the machine was, it is reported, damaged beyond repair.

## French Air Mails Popular

THE total amount of air mails carried in France—as far as the Latecoere air line is concerned, at all events—is increasing month by month, the average monthly total of letters being over 300,000. In 1920 the number of letters carried during the first six months was only 51,532, whereas for the same period this year it was 332,188.

## Maj. Zanni's World-Flight

MAJ. ZANNI, the Argentine world-flyer, who left Hong Kong for Shanghai on September 27, arrived safely at Foochow. Here he was delayed several days by bad weather, but he eventually arrived at Shanghai on October 1, having covered the 500 miles from Foochow in 5 hrs.

## The Pulitzer Trophy Race

THIS year's Pulitzer Trophy Race, which was flown at Dayton, Ohio, on October 4, was marred by a fatal accident to Capt. Burt E. Skeel, one of the best-known pilots of the U. S. Army Air Service. According to reports, Skeel, who was flying a Curtiss racer, was diving towards the starting pylon in order to gain speed before starting over the course, when the wings of the machine collapsed while he was flying a speed of over 200 m.p.h. The machine fell like a stone from a height of 1,000 ft., and on striking the earth buried itself into the ground some 10 ft. deep. The race proceeded, however, and was won by Lieut. H. H. Mills, on a Verville Sperry Racer, who covered the 124.7 mile course at a speed of 216.55 m.p.h.

## Berlin-Furth Air Service

An important air service was brought into operation on August 11, by Junkers Co., running between Berlin and Furth, *via* Dresden, thus connecting the Frankfort-Munich line, and the Baltic Sea air traffic with that of the Trans-European Union in the Danube countries and Switzerland. The total time for the flight from Berlin to Munich takes six hours.



### Married

CHARLES R. BARTLAM, only son of Mr. and Mrs. C. R. Bartlam, The Corbyn, Torquay, was married, on September 3, at All Souls', Langham Place, W., to ELAINE TASSINA, only child of the late A. C. SPENCER, Esq., Aeronaut, and Mrs. SPENCER. Miramar, Lee, N. Devon.

ARNOLD BEVAN (late R.F.C.), son of Mr. and Mrs. Trevor Bevan, of Bournemouth, was married on September 27, at Farmington, Conn., U.S.A., to MURIEL, only child of Mr. and Mrs. TROWBRIDGE ALLEN, of Farmington, Conn.

Flight-Lieut. W. M. FRY, M.C., R.A.F., was married on August 20, at Colesbourne, Gloucestershire, to KATHERINE MARY CARRINGTON, elder daughter of the late Maj.-Gen. Sir Frederick Carrington, K.C.B., K.C.M.G.

Squadron-Leader R. H. KNOWLES, M.D., D.P.H., R.A.F., only son of the late H. W. Knowles, M.D., and of Mrs. Knowles,

5 Rawlinson Road, Oxford, was married on October 1 at Christ Church, Hampstead, to GLADYS EYRE, youngest daughter of Mr. and Mrs. Henry Reid INMAN, The Grange, Hampstead Heath.

Pilot Officer RODERICK F. DE R. READ, R.A.F., was married on September 27 at Sherborne Abbey, to MARION ST. JOHN, youngest daughter of the late R. St. J. AINSLIE.

The marriage arranged between Squadron-Leader R. H. KNOWLES and Miss GLADYS INMAN took place very quietly at Christ Church, Hampstead, on October 1, at 12 o'clock.

### Item

CAPITAINE DE CORVETTE SABLÉ, Air Attaché at the French Embassy, left London, on August 29, for Paris, on leave.

### Constantinople-Angora Air Service

It is reported that the Turkish Government has authorised the Franco-Roumanian and the Junkers companies to run air services between Constantinople and Angora over a period of three months, and thus compete for a concession for the establishment of an air service on the lines laid down in the recommendations of the Commission of Turkish Ministers appointed a little while back to inquire into the formation of air services, etc., in Turkey.

### Ford Aeroplanes

FORD aeroplanes are now an actual fact. These are being built at the works of the Stout Metal Airplane Company (Detroit), which company is financed by Henry Ford. The first machine to be completed is a large twin-engined biplane, 120 ft. span, fitted with two Liberty engines. It is made of Duralumin, carries five passengers and pilot, and has a cruising speed of about 140 m.p.h. The company is building ten more of these machines, which in general appearance resemble a combination of Fokker and Junkers machines.

### A Perso-German Air Agreement

ACCORDING to the *Times* representatives of the Junkers Aircraft Company have just returned to Dessau after concluding a comprehensive agreement, the fruit of a lengthy series of negotiations conducted with the Sardar Sipah, Riza Khan, the Persian Prime Minister and Minister of War, in Teheran. Although the terms of the contract have not yet been made public, it will undoubtedly have the effect of placing the organisation and management of a great Trans-asiatic airway in German hands. Viewed, says the *Times*, in the light of its origin and of the immediate developments in the Middle East for which provision has been made, it must be taken to forebode a further consolidation of Russian influence in the Middle East.

As the result of this agreement, a regular service will be opened immediately between Baku, Enzeli, and Teheran, and trial flights preparatory to an extension from the Persian capital to Bushire will be made simultaneously.

### Suspension of Light Air Mails to Northern Europe.

THE Postmaster-General announces that as from Saturday, October 4, in consequence of an alteration in the air service from Rotterdam to Copenhagen, the letter Air Mails for Germany (Hamburg and district), Denmark, Norway, Sweden and Finland, hitherto closed at the General Post Office, London, at 6.0 a.m., will be suspended. The air Parcel Post to Denmark, Norway and Sweden will also be suspended.

The letter Air Mails closed each morning at the General Post Office, London, at 6.0 a.m. and 7.30 a.m. respectively for (a) Germany (Hanover, Hamburg, and Berlin), and (b) Denmark (Copenhagen) are being continued. The Mail to Berlin offers advantage for letters to Sweden and Eastern Norway.

The air Parcel Post to Germany (all parts) will be maintained by the use of the morning air service from London to Cologne.

### Avro "Avis" Returns Home by Air

AT the conclusion of the Two-Seater Light 'Plane Competitions at Lympne, Bert Hinkler flew back to Hamble on the Avro "Avis" light biplane. Starting from Lympne on Monday, he flew to Croydon, where he stayed the night. Continuing the following morning, he first flew to Farnborough, where he made a short stop, and then proceeded on to Hamble, where he arrived in the afternoon. Hinkler did not experience the slightest trouble throughout the trip.

### Bristol "Cherubs" at Lympne

THE remarkable success of the Bristol "Cherub" engines during last week's Light 'Plane competitions will be at once apparent from the report of the happenings at Lympne, which appears elsewhere in this issue of *FLIGHT*. It will probably be of some interest to note, however, that the average consumptions of the "Cherubs"—the Bristol ones, we mean—down at Lympne throughout the competitions worked out at 33.5 miles to the gallon of petrol, and 520 miles to the gallon of oil.

### Italian Glider Contests

THE first glider contests to be held in Italy opened on October 6 on the Sisemola Hills, near Asiago. The meeting, which has been promoted by the Lega Aerea Nazionale and by a Milan sporting journal, includes competitions for distance, height, duration and accuracy of landing. In addition to several Italian competitors, there is a strong entry from Germany. The German section is made up mostly of University students and numbers 25, but includes the well-known pilots Arthur Martens and Papenmayer. The various pilots have been making a close study of the contours of the surrounding country during the week-end in order to decide upon a favourable jumping-off position. The first flight was made on October 6 by Martens, who remained aloft for 4 mins. 8 secs. on his "Moritz" glider during which time he covered 3 kms. (nearly 2 miles). He was followed by Papenmayer, on a "Konsul" monoplane, who remained up for about 8 mins. and covered a distance of 4.25 kms. (nearly 3 miles). There was at the time only a very light wind blowing. It is probable that during these competitions the Germans will endeavour to set up a duration record.

### Across America by Airship

ON October 7 the U.S. Navy rigid airship "Shenandoah" left Lakehurst, New Jersey, at 10 a.m. for a 7,000-mile trans-Continental trip to the Pacific coast and back. The airship will remain in the air throughout the trip, relying on mooring masts for anchorages during stops *en route*. The first stop will be Fort Worth, Texas, and others will be made at San Diego, Los Angeles, San Francisco, and Seattle. The "Shenandoah" is under the command of Commander Z. Lansdowne, U.S.N., and carries a crew of 37. Between Baltimore and Washington the airship attained a speed of 55 m.p.h.



# THE ROYAL AIR FORCE

London Gazette, September 26, 1924

## General Duties Branch

The following are granted permanent commns. as Pilot Officers, with effect from Sept. 15, and with sen. of Sept. 15, 1923:—E. C. de V. Lart, R. Melbourne. Pilot Offr. on probation C. H. A. Denny relinquishes his short service commn. on account of ill-health; Sept. 21.

## Stores Branch

Flight Lieut. F. Binns, M.B.E. (Capt. and Asst. Paymr., R.A.P.C.), relinquishes his temp. commn. on return to Army duty; Sept. 19.

## Medical Branch

The following are granted permanent commns. in ranks stated (Sept. 24):—Flight Lieut. E. D. D. Dickson, M.B., F.R.C.S.(E.), Flying Offr. J. G. Russell, M.B., B.A.

## Reserve of Air Force Officers

The following are granted commns. in General Duties Branch as Pilot Offrs. on probation (Sept. 23):—Class A.—E. P. Clacey. Class B.—J. W. Bowler.

Flight Lieut. R. M. Clifford resigns his commn.; Sept. 24. The following Pilot Offrs. relinquish their commns. on account of ill-health, and are permitted to retain their rank (Sept. 24):—W. S. Dailey, W. C. Osborn.

London Gazette, September 30, 1924

## General Duties Branch

The following are granted short service commns. in the ranks stated:—Flying Officers (for seven years on the active list).—I. A. Bertram (Lieut. R.N. ret.), G. I. C. Peacocke (Lieut. Indian Army, ret.) (Sept. 15); A. W. Rowbotham (Lieut. Indian Army, ret.) (Sept. 16).

Pilot Officers on Probation (for five years on the active list).—E. C. G. Badcock, C. N. Boswell, G. B. Collet (Lieut., Hants. Regt.), L. Connolly, L. Dalton-Morris, J. A. C. Florence, A. H. Frost, J. S. Georgeson, E. B. C. Groner, G. D. Harvey, R. G. M. Hill (Sec. Lieut., London Regt.), R. D. Kerans, A. R. C. Kirby, L. R. Mizen, J. J. Nolan, W. F. Rimmer, F. C. Rowland, R. J. Stevens, C. W. Switzer, D. W. Trotter, J. W. Van der Beeck, A. J. Walker, G. A. Whitehead (Sept. 15).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

## General Duties Branch

Wing Commanders: A. Shekleton, D.S.O., to Reception Depot, West Drayton, to command. 1.9.24. C. E. Maude, to School of Naval Co-operation, Lee-on-Solent, pending taking over command. 14.10.24.

Squadron Leaders: F. C. V. Laws, O.B.E., to Sch. of Photography, S. Farnborough. 28.10.24. F. W. H. Lerwill, O.B.E., to Reception Depot, West Drayton. 1.9.24.

Flight Lieutenants: H. J. Edgar, to Sch. of Photography, S. Farnborough. 24.9.24. C. Perri, to Air Ministry. 28.10.24. H. E. Walker, M.C., D.F.C., to R.A.F. Depot. 1.10.24. E. B. Grenfell, A.F.C., to R.A.F. Depot, on transfer to Home Estab. 30.9.24. M. Moore, O.B.E., to remain at R.A.F. Depot instead of to No. 3 Group H.Q., as previously notified. F. Leathley, M.C., to R.A.F. Depot on transfer to Home Estab. 14.9.24. V. A. Albrecht, O.B.E., M.C., to R.A.F. Depot (Non-effective Pool). 24.9.24. N. V. Wrigley and S. T. Freeman, M.B.E., to Reception Depot, West Drayton. 1.9.24. C. S. Richardson, M.B.E., to Basrah Group H.Q. 12.9.24. C. J. W. Hatcher, A.F.C., to No. 1 Stores Depot, on transfer to Home Estab. 30.9.24.

Flying Officers: H. A. Boniface, to No. 27 Sqdn., India. 25.1.24. G. P. H. Carter, to R.A.F. Depot. 10.10.24. R. L. Ragg, to R.A.F. Depot on transfer to Home Estab. 11.9.24. G. W. Mahony-Whitton, H. Nelson, W. Wheatley, A. H. Harrison, and R. G. Chapell, to Reception Depot, West Drayton. 1.9.24. L. Hamilton, M.B.E., D.F.C., to Inland Area Aircraft Depot, Henlow. 17.9.24. A. W. Wood, to No. 17 Sqdn., Hawkinge. 9.10.24. B. J. O'Connor Hanstock, to R.A.F. Depot (Non-effective Pool) on transfer to Home Estab. 13.7.24.

Pilot Officers: J. E. Tones to No. 84 Sqdn., Iraq; 18.9.24. S. A. Young and A. C. Addams to No. 1 Sqdn., Iraq; 18.9.24. J. W. New to No. 70 Sqdn., Iraq; 18.9.24. G. H. W. Selby-Lowndes to No. 6 Sqdn., Iraq; 18.9.24. H. D. Mitchelmore to No. 1 Sqdn., Iraq; 18.9.24. F. W. L. C. Beaumont to No. 30 Sqdn., Iraq; 18.9.24. E. C. G. Badcock, C. N. Boswell, G. B. Collet, L. Connolly, L. Dalton-Morris, J. A. C. Florence, A. H. Frost, J. S. Georgeson, A. J. Walker, G. A. Whitehead, H. C. MacPhail, E. B. C. Groner, G. D. Harvey, R. G. M. Hill, R. D. Kerans, A. R. C. Kirby, L. R. Mizen, J. J. Nolan, W. F. Rimmer, F. C. Rowland, R. J. Stevens, C. W. Switzer, D. W. Trotter, and J. W. Van der Beeck, all posted to No. 5 Flying Training Sch., Sealand, on appointment to short service commissions; 15.9.24. C. G. M. Anderson and L. C. Lewis to No. 30 Sqdn., Iraq; 23.9.24. C. H. W. Boldero and J. H. Woodin to No. 55 Sqdn., Iraq; 23.9.24. D. C. Burnley, C. N. A. B. Mumby, and N. W. F. Mason to No. 60 Sqdn., India; 23.9.24. L. H. Ross and S. M. Thomas to No. 8 Sqdn., Iraq; 23.9.24. J. B. Townend to No. 27 Sqdn., India; 23.9.24. E. C. de V. Lart and R. Melbourne to No. 5 Flying Training Sch., Sealand, on appointment to permanent commns.; 15.9.24.

Pilot Officers: A. E. St. G. Gratte, to No. 20 Sqdn., India. 3.3.24. H. J. Storey, to No. 28 Sqdn., India. 22.5.24. A. S. Hutton and G. H. Rawlinson, to No. 60 Sqdn., India. 25.1.24.

## Stores Branch

Squadron-Leaders: W. E. Aylwin, O.B.E., to Basrah Group H.Q., Iraq; 18.9.24. G. Stevens, O.B.E., to Aircraft Depot, Iraq; 18.9.24. F. Grave,

The following are restored to full-pay from half-pay:—Sqdn. Leader A. S. C. S. MacLaren, O.B.E., M.C., D.F.C., A.F.C. (Sept. 20); Flight Lieut. T. Q. Studd, D.F.C. (Sept. 17); Flying Officer W. N. Plenderleith (Sept. 20). Sqdn. Leader F. E. Sandford, A.F.C., is placed on half-pay, scale B (July 9).

## Reserve of Air Force Officers

The following are confirmed in rank:—Flying Officers.—H. A. Hince (Sept. 4); K. Don (Sept. 25). Pilot Officers.—G. C. F. Ely (Sept. 4); H. L. Miller (Sept. 11); C. K. Carter (Sept. 25); J. M. Mathieson (Sept. 25).

London Gazette, October 3, 1924

## General Duties Branch

H. C. Macphail is granted a short service commn. as Pilot Officer on probation, with effect from and with sen. of Sept. 22; Pilot Officer on probation J. H. Caulfield is confirmed in rank (May 10); Flying Officer C. E. Bowden (Lieut., R.A.S.C.) relinquishes his temp. commn. on return to Army duty (Sept. 30).

## Stores Branch

Flying Officer P. H. Wynne-Burt is granted a permanent commn. in the rank stated (Oct. 1). The following Pilot Officers on probation are confirmed in rank and promoted to rank of Flying Officer (June 17); W. F. Barrell, D. F. A. Clarke, J. M. Hopkins, G. R. Keep, S. C. Wyatt.

## Medical Branch

The following are granted short service commns. as Flying Officers, with effect from and with sen. of Sept. 15:—C. J. MacQuillan, M.B., B.A., F. P. Schofield, M.B.

## Reserve of Air Force Officers

The following are granted commns. on probation in General Duties Branch, in the ranks stated (Sept. 30):—

Class A.—Flying Officers S. J. Clinch, D.C.M., G. L. Shephard, A. R. Turpin. Pilot Officers H. D. Clevely, L. F. Cubitt, E. H. Rossington.

Class B.—Pilot Officer C. G. Gass, M.C. Flying Officer G. F. Drudge relinquishes his commn. on account of ill-health, and is granted the rank of Flight Lieut. (Oct. 1); Pilot Officer A. E. Roberts resigns his commn. (Oct. 1).

M.B.E., to H.Q., Iraq; 18.9.24. R. Whyte (Accountant) to No. 3 Stores Depot, Milton; 8.10.24.

Flight-Lieutenants: A. W. Turner and H. Jones to Stores Depot, Iraq; 18.9.24. F. R. Wilkins to H.Q., Iraq; 18.9.24. W. A. Kingston to R.A.F. Depot, on transfer to Home Estab.; 1.9.24. E. C. M. Knott (Accountant) to H.Q., Iraq; 18.9.24. W. H. Hoile, M.B.E. (Accountant) to No. 1 Sch. of Tech. Training (Boys), Halton; 1.10.24.

Flight Lieutenants: W. A. Kingston, to No. 2 Flying Training Sch., Digby. 29.9.24. C. Harvey, to R.A.F. Depot. 7.10.24. W. F. Fisher (Accountant), M.C., to Sch. of Army Co-operation, Old Sarum. 14.10.24. A. D. Stonehouse, (Accountant), to No. 1 Flying Training Sch., Netheravon. 14.10.24. W. R. Donkin, to No. 11 Sqdn., Netheravon. 14.10.24.

Flying Officers: R. Craig to Stores Depot, Iraq; 18.9.24. H. F. Webb to Aircraft Depot, Iraq; 18.9.24. R. D. G. Macrostie, M.B.E., to No. 8 Sqdn., Iraq; 18.9.24. R. G. Gore to No. 5 Armoured Car Co., Iraq; 18.9.24. H. B. S. Ballantyne to No. 70 Sqdn., Iraq; 18.9.24. J. P. A. Fulton (Accountant) to Brigade Accountant Office, Iraq; 10.7.24. R. W. Freeman (Accountant) to No. 45 Sqdn., Iraq; 2.9.24. A. T. Wells, to Aircraft Depot, Iraq. 12.9.24.

## Stores and Accountant Branch

Flight-Lieutenants (Accountant): E. N. E. Waldron to Aircraft Depot, Egypt; 15.8.24. H. W. Capener to Stores Depot, Iraq; 2.8.24. Flying Officer (Stores): E. V. Bashford to Aden Flight; 3.9.24.

## Medical Branch

Group Captains (Medical).—H. V. Wells, C.B.E., to Headquarters, Iraq Command, supernumerary. 5.9.24. N. J. Roche, O.B.E., to Headquarters Inland Area for duty as Principal Medical Officer. 15.9.24.

Squadron-Leader A. E. Panter, B.A., to No. 6 Group H.Q., Kenley; 1.10.24.

Flight-Lieutenants (Medical).—J. G. Skeet, to No. 56 Squadron, Biggin Hill. 7.9.24. J. K. R. Landells, M.B., to R.A.F. Hospital, Cranwell. 16.9.24. J. A. Quin, M.D., B.A., to Central Medical Board, Hampstead. 5.9.24.

Flight-Lieutenants: A. E. Barr-Sim, M.B., to H.Q., Iraq Command; 2.2.24.

C. Y. Roberts to R.A.F. Depot, on transfer to Home Estab.; 23.8.24. Flying Officer (Medical).—W. J. Hutchinson, M.B., to No. 60 Squadron, India. 18.8.24. R. W. White, to R.A.F. Depot. 18.9.24. T. Glynn, M.B., to R.A.F. Depot. 30.8.24.

Flying Officer (Q.-Mr., Medical) C. B. Willsher to Basrah Combined Hospital; 18.9.24.

Flying Officers: R. S. MacLachy to R.A.F. Depot, Uxbridge; 22.9.24. C. J. MacQuillan, M.B., B.A., and F. P. Schofield, M.B., to Research Laboratory and Medical Officers' School of Instruction, Hampstead, on appointment to a short service commission; 15.9.24.

Flying Officers: J. B. Gregor, L. P. McCullagh, M.B., S. G. Gilmore, R. H. Stanbridge, G. P. O'Connell, M.B., and R. T. F. Grace, M.B., to H.Q., Iraq; 18.9.24. D. Magrath, M.B., to Research Lab. and Medical Officers' Sch. of Instruction, Hampstead, for short course. 24.9.24.

## Chaplains' Branch

Rev. G. H. Collier, M.A., to Aircraft Depot, Egypt; 18.9.24.

## R.A.F. Decorations

THE Air Ministry announces that His Majesty the King has been graciously pleased to approve of the grant of the General Service Medal, with clasp "Kurdistan," to the forces, under the command of Air Marshal Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., which carried out certain operations in Kurdistan between March 19, 1923, and June 18, 1923.

## Doctor's Flight to Patient

IN order to operate on a man who had met with an accident at Winton, Queensland, without delay, Dr. F.

Michod, who resided at Longreach, some 100 miles away, travelled to his patient by aeroplane. He arrived at Winton within an hour, and successfully performed the operation. Dr. Michod has made use of the aeroplane in his professional duties on many previous occasions.

## Two R.A.F. Airmen Killed

FLYING-OFFICER ARCHIBALD HAY STIRLING and Leading Aircraftsman William James Arthur Turton were killed at Andover on October 2. They were flying in a Bristol Fighter, and the pilot started a spiral descent from 2,000 ft., but failed to flatten out before the machine crashed into the ground.

## AIR POST STAMPS

By DOUGLAS B. ARMSTRONG

### Trans-American First Flight

ONE dollar-fifty (about 7s. 6d.) each is the price quoted in the U.S.A. for "first flight covers" of the regular New York-San Francisco service inaugurated on July 1. Each of the 15 intermediate air mail stations was supplied with a special cachet for use on that day, in the form of a rectangle measuring  $2\frac{1}{2}$  by  $\frac{1}{2}$  and enclosing the following inscription, in four lines:—

Via Air Mail—on first trip of  
new schedule involving night  
flying on Trans-Continental Air  
Mail Route.

This rubber stamp was applied indifferently in red, blue, purple, or black ink.

### Adelaide-Sydney First Flight

THE modest price of 1s. each is asked by an Australian firm for flown covers carried on the first mail flight between Adelaide and Sydney on June 2-4, 1924. No distinguishing marks were officially applied, but in some cases the senders themselves added the superscription "Per First Aerial Mail." The mail, consisting of five bags, was, however, back-stamped on arrival at the G.P.O. with the regular Sydney postmark of June 4, 1924, which in conjunction with the Adelaide date stamp of two days previous gives proof of authenticity.

### Berlin-Angora Air Mail

RECENT notable flights have produced some interesting additions to the air post collection. Prominent amongst them are letters carried on the experimental air mail flight from Berlin to Angora, by the Junker seaplane, on July 5, 1924. A mail of approximately 250 letters was conveyed by the pilot Herr Zimmermann, each of which bore a specially-designed label in blue and sepia with a vignette of an aeroplane in flight, reminiscent of the Chinese air post stamps. One thousand of these semi-official air mail stamps were printed and sold for 2 gold marks each as a contribution towards the expenses of the undertaking.

At the eleventh hour the German post office decided to recognise the flight officially and to handle the mail, with the result that the "flown covers" bear the Berlin-Luftpost as well as the official Angora postmarks, in addition to circular cachets lettered respectively "Erster Flug Berlin-Angora, Berlin 5.7.24" and "First Trip Berlin-Angora, Angora 6.7.24."

It is understood that special air post stamps, as well as cachets, have also been provided for use on letters carried by the airship ZR3 on her transatlantic flight.

### Stockholm-Berlin Night Flight

ABOUT 150 letters were transmitted by air in either direction when the first night mail flights between Berlin and Stockholm and *vice versa* took place on August 18 of this year. Those originating in Berlin bear the regulation air post cancellation of August 14, on which date the flight was originally scheduled to be made, supplemented by a rubber-stamped inscription in German explaining the cause of the delay. Air mail letters from Stockholm show the despatch mark of that city, dated August 18, 1924, together with the Hamburg (Luftpost) receiving mark of the same date, as owing to fog the seaplane carrying the mail was unable to complete the trip.

### German Glider Postcards

SOUVENIR postcards impressed with an official air mail stamp of varying denomination were issued in connection with the annual German light plane week, held this year at Wasserkuppe (near Frankfurt). A special cancellation was also applied to these cards, which were flown by glider to Frankfurt and thence despatched to destination. The total number issued is said to have been 6,000 at 5 pfennigs, 3,000 at 10 pfgs. and 1,000 at 20 pfgs.

### Brazilian Air Postcards

FEW air post collectors seem to be aware of the existence of special postcards intended for use in the air post service, then projected, that were printed in Brazil about five years ago. They consist of the ordinary Brazilian 100 reis postcard with impressed stamp, overprinted "CORREIO AEREO" above a winged device surmounting the inscription "Handley Page, Ltd.—B.900. 500 reis." A certain number of these air postcards are believed to have been carried on an experimental flight from San Paulo to Rio de Janeiro towards the end of 1919.

Any information that readers of FLIGHT can supply regarding this little known air post will be welcomed by the writer.

## SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association).

THE competition for FLIGHT Challenge Cup will be held at the Sudbury Hill Flying Ground on Saturday, October 11, at 3 p.m. Also on this date the preliminary trials for the Self-righting Glider Competition will take place, the competition being held on the same ground on the following Saturday, October 18, at 2 p.m.

A. E. JONES, Hon. Sec.

### PUBLICATIONS RECEIVED

*The Mechanical Boy*.—A new weekly journal, entitled *The Mechanical Boy* and published by Percival Marshall and Co., has recently made its appearance, and, judging from the first number before us, this new magazine be "just the thing" for all youngsters of a mechanical and scientific turn of mind. It deals with a variety of subjects, theoretical and practical, amongst which may be mentioned aviation, wireless, steamships, locomotives, etc. The price of each number is 3d.

*Aeronautische Meteorologie*. By Fritz Fischli. Richard, Carl Schmidt and Co., Lutherstrasse 14, Berlin, W.62.

*Institution of Automobile Engineers, Proceedings*. Vol. XVIII, Part I: *Report of the Empire Motor Fuels Committee*. Watergate House, York Buildings, Adelphi, London, W.C. 2.

*U.S. National Advisory Committee for Aeronautics. Report No. 191*.—Elements of the Wing Section Theory and of the Wing Theory. By Max M. Munk. *Report No. 187*. Flame Speed and Spark Intensity. By D. W. Randolph and F. B. Silsbee. No. 193. Pressure Distribution over the Wings of an MB-3 Airplane in Flight. By F. H. Norton. U.S. Government Printing Office, Washington, D.C., U.S.A.

### Catalogues

*Musée des Thermes et de Cluny. Catalogue of Photographs*. J. Leroy and Co., 55, Faubourg-Poissonnière, Paris.

*Journal of the American Society of Naval Engineers*. August, 1924. American Society of Naval Engineers, Navy Department, Washington, D.C., U.S.A.

### AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

#### APPLIED FOR IN 1923

Published October 9, 1924

- 18,145. R. M. HILL and E. ROBINSON. Landing-carriages for aircraft. (221,606.)  
19,694. ARMSTRONG-SIDDELEY MOTORS, LTD., F. R. SMITH and B. W. SHILSON. Air-brake testing-mechanism for fluid pressure engines. (221,620.)  
19,698. ARMSTRONG-SIDDELEY MOTORS, LTD., F. R. SMITH and B. W. SHILSON. Dynamometer beds for testing engine-power. (221,621.)  
31,607. BLACKBURN AEROPLANE and MOTOR CO., LTD., and J. D. RENNIE. Hulls for flying-boats. (221,712).

#### APPLIED FOR IN 1924

Published September 18, 1924

117. H. BEGHIN and P. MONFRAIX. Gyroscopic compasses.

Published September 25, 1924

- 1,399. SOC. BUSCAVLET PERE ET FILS ET BOBIN. Starting device for aeroplane engines. (221,140.)

Published October 2, 1924

- 3,675. A. J. MARCELIN. Course indicator for aircraft. (211,476.)

Published October 9, 1924

- 6,110. H. FARMAN. Regulation of i.c. engines for aircraft. (213,894.)

## FLIGHT

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